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REPORT ON THE MEANS OF IMPROVING THE SANITARY CONDITION OF CHICAGO.

TO THE HONORABLE MAYOR AND COMMON COUNCIL OF CHICAGO:—The undersigned committee, appointed by a public meeting of the medical profession of this city, to recommend such measures as might be deemed important in relation to the sanitary condition of Chicago, more especially with reference to the anticipated prevalence of epidemic cholera, would, most respectfully, submit the following suggestions:—

That there are good and sufficient reasons for apprehending an epidemic prevalence of cholera in this country during the coming spring and summer, few who are conversant with the history of former epidemics of that disease, will be disposed to doubt. Hence, it is not only the part of wisdom and ordinary prudence, but it is the imperative duty of all municipal authorities to institute immediate and well-directed measures for preventing its prevalence, or mitigating its severity. While we freely admit that the primary or efficient cause of cholera may be some obscure and hitherto uncontrolled condition of the atmosphere, yet we claim that no fact in human history is better established than that local conditions exert a controlling influence in determining both the number of attacks and their fatality.

The local conditions known to be most efficient in promoting the prevalence and fatality of the disease may be included under the following heads, namely, *impure* and *damp air*; *unwholesome water*; *unwholesome food*, whether animal or vegetable; and excesses in the use of stimulating drinks, with neglect of personal cleanliness. That all these conditions exist in this city at the present time, in a highly aggravated degree, no reasonable man will deny. The naturally level surface of the soil, with an understratum of impervious clay, coupled with the very great neglect of occupants and owners of lots to connect them properly with the street sewers, causes the constant retention of sufficient surface water to impregnate the air with an excess of aqueous vapor; while the amount of animal and vegetable matter constantly left in the streets, alleys, gutters, and rear portions of lots, furnishes an abundance of noxious effluvia or gases to rise with the aqueous vapor, and, thereby, cause our city atmosphere to be both *impure* and *damp*. This is not only true of the *out-of-door* atmosphere, but is equally true of that in a large portion of the dwellings. Inspection will show that many hundreds of the houses in this city stand so directly over either standing water, or a soil so saturated, during all the spring, summer, and autumn months, that all the lower rooms are sufficiently damp to cause the rapid growth of fungi or mildew on books, clothing, and whatever is not used almost daily. This dampness, with its accompanying impurities, in our dwellings is a far more prolific source of disease, and especially of cholera, than the water and filth, so offensive to the eye and nose, in the open gutters of our streets. Hence, we shall earnestly call your attention to the measures necessary for remedying this evil.

Besides the accumulations of decomposable animal and vegetable matters, with water, in the streets, alleys, and surfaces of lots, the air of the city is further rendered impure by offensive emanations from sewers, cesspools, privies, stables, slaughtering, packing, and manufacturing establishments, &c., all of which are capable of being greatly mitigated, or entirely prevented, by the adoption of proper measures. The impure and unwhole-

some quality of much of the water used in this city is too well-known to need comment. That unwholesome food is often exposed for sale in our markets, and used by some classes of our citizens, is well-known; and no fact in the range of social science is better established, than that excessive use of alcoholic stimulants and personal uncleanness very strongly predispose to attacks of cholera. Another very strong predisposing influence is found in the overcrowding of the sleeping apartments of boarding-houses and dwelling-houses of the laboring classes. Members of this committee can point to scores of small tenements in the central parts of our city, in the low and unventilated chambers (or more properly garrets) of which there are nightly just as many occupied beds as can be placed side by side, and leave room for a person to stand up between them. In this way, from twelve to fifteen adults are often confined in a quantity of air no more than sufficient to supply, properly, two. No intelligent physician, who practiced in this city during the cholera epidemics from 1849 to 1854, failed to observe the extremely injurious influence of such overcrowding. It was one of the most active influences in destroying thousands of the emigrants who crowded our city during those years. Having thus simply enumerated the chief conditions, now existing in our city, directly calculated to impair its sanitary condition at all times, and especially calculated to awaken any latent tendency to an epidemic of cholera, as well as to add ten fold to its malignity and fatality, when once begun, this committee will most respectfully and earnestly ask your attention to the following specific remedial measures:—

1st. The passage and rigid enforcement of such ordinances as will cause all lots, whether occupied or not, to be so connected with the street sewers and gutters as to relieve them from surface water, especially from under and immediately around dwellings. This is a matter of urgent importance in every section of the city, and as it can be properly done at the expense of the owners of lots, there is no reason why attention to it should be delayed.

2d. The immediate organization of a complete scavenger sys-

sem, for the prompt removal of all garbage and refuse matter from every part of the city, and the vigilant enforcement of its practical operation. This, and this only, would prevent the further accumulation of filth and decomposable materials, and allow a reasonable time for the removal of what already exists. If every part of the city should be thoroughly cleaned and placed in good sanitary condition to-morrow, without the daily operations of a complete and efficient scavenger system, before the expected cholera season, next spring, every street and alley, with many of the lots, would be again reeking with filth and pestilential emanations. Hence, the very first money placed at the disposal of those having in charge the sanitary interests of the city should be applied to the establishment of a permanent and efficient scavenger system for the whole city.

3d. A more vigilant patrol of the river and its branches, for the purpose of excluding therefrom every species of animal and vegetable matter of a decomposable nature, except that which necessarily escapes from the street sewers.

4th. The more extensive inspection of privies, stables, street and lot gutters, the premises of slaughtering, rendering, packing, soap and candle, and all other manufacturing establishments, and the most rigid enforcement of cleanliness; together with the adoption of measures for intercepting and neutralizing of noxious gases from cesspools and sewers. For the latter purpose, charcoal placed in proper gratings over the openings and outlets of cesspools and sewers, affords an effectual and cheap material, as has been thoroughly demonstrated in some of the worst districts of London. For open gutters and privies, lime and other disinfectants should be used.

5th. The removal, as fast as possible, of all present accumulations of decomposable and offensive materials from the streets, alleys, and lots of the city. This task should be commenced and prosecuted with sufficient vigor that, with the daily operations of a scavenger system, the first warm spring days in April next should find all parts of the city clean and free from those materials that have in all ages and countries given to pestilence its virulence and fatality.

6th. The prevention of overcrowding and want of ventilation and cleanliness in boarding and tenant houses. This, in the present crowded state of our city, may not be practicable to the full extent, yet a proper system of inspection and judicious instruction to property owners, as well as occupants, would do much to mitigate the evil. There is one branch of this subject, however, which, in view of a probable epidemic of cholera, is of very great importance, and is fully under the legitimate control of the city authorities. All the members of this committee who practiced medicine here through all the cholera epidemics from 1849 to 1854, vividly remember how large a share of the entire mortality was occasioned by the tide of emigrants and new-comers, who, by every boat and railroad train, came to fill the small, damp, and filthy boarding-houses and dwellings; themselves not only unused to the climate, but often loaded with personal filth and filthy baggage. We speak advisedly, when we say that more than half of all the deaths occasioned by the epidemics of those years, occurred among this class of our population and those in immediate contact with them. To prevent a similar state of things the coming season, we would earnestly call your attention to the propriety of establishing adequate and comfortable sheds or temporary buildings at convenient places on all the Eastern and Southern lines of communication, entirely beyond the city limits, where, during all the cholera season, (if such season comes,) all emigrants, with their baggage, shall be detained long enough to have themselves and clothing washed and ventilated, and such as are sick among them properly cared for. In connection with this, such arrangements should be made with railroad managers, that persons of this class, whose destination was in the interior of the country, should be transported from the established places of detention directly through the city, without unnecessary delay. Such an arrangement could be made to serve all the useful purposes of a quarantine, and greatly lessen one of the most active causes of epidemic fatality in the city.

7th. The establishment of *Public Urinals*, at convenient distances, in all the more densely populated parts of the city, and

the prohibition of the use of alleys and street corners for that purpose. The latter is not only an offence against public decency, but the impregnation of the soil in the alleys and around the street corners with urine is a prolific source of offensive and poisonous emanations. No species of animal matter more readily enters into decomposition, or emits elements more poisonous to the human system than urine. In connection with this, we would also strongly recommend the establishment of neat public fountains or drinking places. These would not only be a convenience to the poor and laboring classes, but they would deter thousands from resorting to the use of injurious and expensive liquids in the drinking saloons of the city.

8th. Finally, we would earnestly ask your immediate attention to the rigid exaction of certificates setting forth the cause of death, made by the attending physician, and returned to the proper officer, before permission is granted to bury the body. Such certificates should state clearly the age, sex, cause of death, and residence, signed by the physician. And in case no physician had visited the patient, that fact, with the probable cause of death, should be certified to by the sexton, and returned as in the other cases. All these certificates should be returned to a competent physician, who should see that they were properly made, placed on file, and properly tabulated for publication every week. By such a registry of deaths, it would be in the power of the city authorities to ascertain promptly, at all times, the occurrence of any unusual mortality in the city, and to trace it directly to the exact localities and classes of people giving rise to it; a matter of vital importance in every populous city. The present registry of deaths, so far as the *causes of the deaths is concerned*, is a ridiculous and shameful farce.

For the purpose of aiding in the prompt adoption and the judicious practical enforcement of the foregoing measures, we would suggest the propriety of selecting a permanent advising committee, consisting of five thoroughly competent physicians, who would be not only ready to aid the proper authorities in carrying out judiciously the measures already suggested, but would

also be maturing ready for adoption, if the emergency should come, proper plans and locations for temporary hospitals for those attacked with cholera, suitable dispensaries for the prompt aid of such as might be threatened with attacks, and such other matters relating to the means of preventing and mitigating disease as the circumstances might require. Such a committee, properly selected, while they would cheerfully render their advisory services gratuitously, would be able not only to ensure the adoption of more judicious measures, and their more efficient enforcement, but would also save to the city thousands of dollars, by causing the avoidance of such confused, useless, and sometimes positively hurtful measures as are always liable to be adopted when these things are left until the alarm and excitement of a fatal epidemic is upon us.

In presenting the foregoing topics for your consideration, we have avoided all allusion to mere theoretical questions as to the contagiousness or non-contagiousness of cholera, and have made such recommendations only as are universally conceded to be necessary by all intelligent members of our profession, both in Europe and America. While we would not utter one word calculated to create needless alarm, we feel it our imperative duty to warn you, as the legal guardians of our city's welfare, that every fact connected with former epidemics, as well as every indication afforded by the progress of the present one up to this time, renders it almost certain that this continent will be the theatre of cholera during the year 1866.

And no mere pecuniary considerations should deter those in authority from the most diligent and best directed efforts to remove all the causes that either invite its prevalence or increase its severity. Our citizens could better afford to raise a fund of an hundred thousand dollars, five times repeated, than to suffer such an epidemic as would arrest all business for six months, depreciate the sanitary credit of our city for years, and depreciate, correspondingly, the value of property, to say nothing of the loss of human life. That the adoption and faithful execution of the measures recommended in this report would so far improve the sanitary condition of this city that the expected

visitation of cholera would be rendered mild and comparatively harmless, we confidently believe. On the other hand, if these measures are neglected, and in their place only partial and spasmodic efforts made to clean out a few prominent streets and noted alleys, we just as confidently believe that before another Fourth of July comes, the insignia of mourning for the victims of cholera will be seen on every block in our city. But even if no cholera epidemic were ever to visit us, the sanitary measures recommended in this report, except simply that referring to quarantine stations and sheds for emigrants, would be imperiously demanded for protection against the annually increasing prevalence of cholera infantum, dysentery, and typhoid and typhus fevers, as well as for the comfort of our citizens, and the sanitary reputation of our city.

We therefore close this communication with an earnest prayer, that your honorable body will act on these subjects with that promptness and wisdom which should ever characterize those having the supervision of almost all that nearly 200,000 people hold valuable and sacred. And we fully pledge to your support, the best efforts of ourselves and our professional brethren of this city. All of which is most respectfully submitted.

Committee,

{ N. S. DAVIS,
J. W. FREER,
J. P. ROSS,
H. HITCHCOCK,
RALPH N. ISHAM,
B. McVICKAR.

TYPHOID FEVER COMPLICATED WITH BRONCHO-PNEUMONIA.—CLINICAL CASES IN THE MEDICAL WARDS OF MERCY HOSPITAL. SUBSTANCE OF A CLINIC.

By N. S. DAVIS, M.D., Prof. Clinical Medicine, &c., &c.

GENTLEMEN:—A few days since, I directed your attention to two cases of typhoid or enteric fever in this ward, each compli-

cated with serious pneumonic inflammation. One of them is still occupying the bed in which you saw him, towards the other end of the ward, and is now convalescent. He is a native of Norway, aged about 22 years, and had been sick ten or twelve days before his admission into the hospital.

At the time your attention was called to his case, he was presenting all the symptoms of the advanced state of typhoid fever, such as somnolency; muttering delirium; dry tongue and mouth; sordes on the lips and teeth; dryness of the skin, with congestion of cutaneous capillaries; tympanitic abdomen, with five or six thin, reddish-brown intestinal discharges daily. Upon this condition had rapidly supervened, during the three or four preceding days, short and hurried breathing, with loud bronchial ronchi over the whole anterior part of the chest, a mixture of dry and moist ronchi in the axillary and sub-axillary regions, and in the latter dulness on percussion. There was cough with a scanty expectoration tinged with dark blood, and the pulse was 120 per minute, small and weak. I then explained to you that the case presented all the phenomena of typhoid fever, with the enteric disease peculiar to that grade of fever well developed, on which had supervened universal congestion of the mucous membrane of the respiratory passages, with pneumonic infiltration of the middle lobes of both lungs, constituting a most dangerous condition, yet one frequently met with in this climate during the latter part of autumn and early spring.

You will remember that we directed a blister to be applied to his chest, while he took, internally, the emulsion of oil of turpentine and tincture of opium every four hours and one of the following powders between:—

R. Pulv. Opii,-----	6 grs.
Tart. Ant. et Pot.-----	1 gr.
Sacchar. Alba,-----	30 grs.

Mix, and divide into six powders.

Under that treatment he soon began slowly to improve. The symptoms of intestinal irritation first disappeared, and the ordinary anodyne cough mixture was substituted for the emulsion, and after four or five days the powders of opium and antimony

were restricted to one every night. As already remarked, that patient is now convalescent. The other to whom I directed your attention, at the same clinic, and whose chest you had an opportunity of auscultating, was a case of typhoid fever, presenting complications of the same nature, but much more severe.

The patient, a German, aged about 25 years, instead of being somnolent, was affected with constant delirium and sub-sultus; the intestinal discharges were not only more frequent, but they were mixed with mucus and blood; and the whole right lung, from the clavicle to the diaphragm, yielded a complete dull sound on percussion, and only very slight respiratory or vesicular murmur by auscultation. At first, a blister was applied to the right side of the chest, and the same remedies given internally, as in the case previously alluded to. After continuing this treatment two full days, the intestinal discharges and abdominal tympanites were much improved, but the delirium, the muscular tremulousness, and the oppression of breathing were much increased. The pulse was small, soft, and frequent. Thinking it very desirable to lessen the nervous jactitation and delirium, so as to induce some sleep, and finding the powders of opium and antimony to fail, I caused them to be omitted and fifteen drops of chloroform given in their place every three hours, alternated with the turpentine emulsion. In twenty-four hours after commencing the use of the chloroform, his pulse and respirations were slower; the sub-sultus less; and he obtained short intervals of quiet sleep. The bowels also remained quiet. Consequently the same remedies were continued, only at a little longer intervals. On the afternoon of the second day, he not only remained more quiet and rational, with a fair amount of sleep, but he coughed less, and there was decidedly less dulness over the upper lobe of the right lung, with a corresponding increase of respiratory murmur. The bowels had also remained without any evacuation, and the abdomen only slightly tympanitic. The amount of chloroform now to be administered was reduced to ten drops every four hours, and an anodyne cough or expectorant mixture given instead of the emulsion. On the fourth day after the first exhibition of the chloroform, the pa-

tient appeared so much improved, in all respects, that I thought his convalescence had fairly begun. He was consequently ordered to have more nourishment, and the use of the chloroform restricted to ten drops each morning, noon, and evening. During the latter part of the following night, however, the patient suddenly expired. The death was preceded by no new symptoms sufficient to attract the attention of the nurses, and no *post mortem* examination was permitted. The immediate cause of the patient's death is, therefore, left to conjecture. It might have been syncope from some unobserved attempt to rise from the bed, or from the formation of emboli or fibrinous clots in the cavities of the heart. The very small quantity of chloroform which he had been taking during the preceding twenty-four hours, could hardly be suspected of having induced excessive anæsthesia of the nervous centres. We have administered that agent, in doses of from 10 to 15 drops, in several cases of typhoid fever with pneumonic complications, in which there was constant delirium and sleeplessness, and in all previous instances with the most satisfactory results.

The case now before you is a German by birth, aged about 25 years. He was admitted to the hospital three days since, and was reported to have been sick about two weeks previously. At my first visit after his admission, his face was suffused with a dark red flush; lips and tongue dry; expression dull; skin moderately hot and dry; pulse 112 per minute, small and weak; respirations short, and accompanied by coarse, dry, bronchial rronchi over both sides of the chest, intermixed with a sub-mucous rhonchus over the middle and lower part of the right lung, with considerable dulness, on percussion, over the latter region. There was also frequent cough, with but little expectoration. The mind was dull and more or less wandering, and slight hemorrhage from the nose. The abdomen was quite full and tympanitic, and he had been having from three to five thin, brown fecal evacuations daily. You will recognize in this assemblage of symptoms, as well as in the present aspect of the patient before you, a well-marked typhoid condition, with the usual enteric disease of the aggregated glands, and, in addition, a dry,

congested condition of the pulmonary mucous membrane, with considerable pneumonic engorgement of the middle and lower lobe of the right lung. To restrain the intestinal irritation and excessive evacuations, I directed him to have a teaspoonful of the turpentine and laudanum emulsion every four hours, and yesterday, finding the dry sounds still predominating in his chest, and the skin dry, I ordered one of the following powders to be taken between each of the doses of the emulsion:—

Ry. Pulv. Opii,-----	8 grs.
Hydrarg. Chlorid. Mite,-----	6 grs.
Tart. Ant. et Pot.-----	1 gr.
Sacchar. Alba,-----	20 grs.

Mix, divide into six powders.

The object of this was to induce such a change in the functions of the skin and pulmonary membranes as would result in free secretion from both, and thereby lessen the congested condition of the pulmonary capillaries, and the tendency to further infiltrations into the pulmonary textures. The patient has taken the powders just named, alternated with the emulsion, during the past twenty-four hours, and if you now step forward and examine him, you see his face less flushed, lips and tongue less dry, though there is still a dry crusted strip through the middle of the latter, and some sordes on his lips. The skin is relaxed and universally wet with warm perspiration. His countenance is still dull; mind somewhat wandering; and you see a little blood on the upper lip, indicating recent slight epistaxis. If you watch the motions of the chest, you see that the respirations are short, and too much abdominal. If you now take the stethoscope and, one by one, listen to the anterior and right lateral part of his chest, you will perceive, still more clearly, the imperfect expansion of the chest by inspiration, while you find the dry, wheezing sounds of yesterday replaced with moist or-mucous rhonchi, intermingled with only an occasional coarse, dry sound. If you move the stethoscope to the anterior margin of the axillary region, you will hear less respiratory sounds of any kind, but if the patient articulates sounds, you will have decided vibration of voice, indicating increased density of that

portion of the lung. Now, what is the exact pathological condition of our patient, and what the indications for further treatment?

The typhoid condition of the patient is strongly characterized; and though the general febrile condition is improved, as indicated by the soft and moist condition of the skin, the less tympanitic condition of the abdomen, and the more quiet condition of the bowels; yet the pulse is very soft, weak, and 115 per minute, the respirations are short, and the patient gives evidence of a feeling of exhaustion. He has evidently arrived at a critical period in his disease. He is vascillating to-day, between a tendency to convalesce on the one hand, and such a general depression of vital properties in his tissues as would soon cause a return of copious intestinal discharges, perhaps mixed with blood, with a rapid increase of infiltration into the pulmonary textures, followed by colliquative sweating, involuntary discharges and death.

Hence, it is necessary to adjust the further treatment with great care. If we continue the antimony and calomel in the powders, we shall increase the risk of the latter alternative. But if we can bring to our aid some agent calculated to give increased tone or contraction to the capillary system of vessels without restricting secretion, we may decide the progress of the case in favor of convalescence. With this view, we shall continue the turpentine and laudanum emulsion every four hours, and change the powders by substituting sulphate of quinine, 2 grs., and pulv. bloodroot, 1 gr., for the antimony and calomel in each powder, leaving the opium as before. As thus altered, one must be given half way between the doses of emulsion. Of course, in all such cases, the patient is carefully fed with animal broth, well-salted, and a porridge of sweet milk and wheat flour. The further progress of this case will be shown you at subsequent clinics.

NOTE.—This patient progressed well under the last prescription, and has since entirely recovered.

Selections.

ON THE PATHOLOGICAL APPEARANCES PRESENTED IN MARSH FEVER.

By J. FORSYTH MEIGS, M.D., one of the Physicians to the Pennsylvania Hospital.

In the admirable work on diseases of the liver, by Dr. F. T. Frerichs, the first volume of which was published in Breslau, in 1858, and the second in 1861, and which has been translated for and published by the New Sydenham Society—a work which must take its place as a model of medical observation and research—will be found a chapter entitled, “The Pigment Liver; Melanæmic Liver; Alterations in the Liver resulting from Intermittent Fever.” My attention having been attracted with unusual interest to the facts and doctrines portrayed in that part of the work, I became anxious to ascertain whether the same pathological appearances as those observed by Dr. Frerichs could be found in cases of malarial disease occurring in this country.

The following cases were observed in the wards of the Pennsylvania Hospital of this city, during the past autumn, and, though few in number, they are sufficient to attest the accuracy of the statements made by Dr. Frerichs:—

The first case was that of a young unmarried woman who, when brought to the hospital, had been suffering for six weeks with intermittent fever, contracted in one of the lower counties of Maryland. The disease was tertian at first, from which it became quotidian, and so continued until the patient entered the wards. No quinia had been exhibited, and the disease therefore presented its natural characters uninfluenced by specific treatment. The patient was not very much reduced in flesh, but was excessively feeble, blanched in color, and had lost all appetite. The spleen descended two inches below the margin of the chest. She had a chill every afternoon, followed by fever and sweating, but exhibited no other signs of disease. On pricking the finger and placing a drop of blood under a quarter-inch lens, it was seen that the red corpuscles were not more than one-fourth as numerous as in health, the white corpuscles were about normal in quantity, but what especially arrested attention was the presence in the field of numerous

minute particles of irregular shape, with angular edges, of blackish color, and entirely opaque. These were the pigment granules of Dr. Frerichs.

The patient was put to bed. Sixteen grains of quinia were given daily, milk-punch, bread and milk, and beef-tea were ordered for diet, and the chills were arrested after the second day. Citrate of iron, five grains, three times a day, was ordered on the third day, the quinia was reduced to twelve, and then to six grains daily, and in a week the patient was convalescent.

Soon after this, three sailors were brought to the hospital from a vessel which had been lying four weeks in the harbor of Aspinwall, in the Isthmus of Panama, and which had been five weeks on the voyage from that port to Philadelphia.

I am indebted to two of the resident physicians of the hospital for notes of the cases, and for details of the *post mortem* examination, and of the microscopic appearances—to Dr. T. H. Andrews, for the former, and to Dr. Edw. Rhoads, for the latter.

CASE I. Geo. H., aged 27, a native of New York, was admitted Nov. 12th, 1864. Whilst at Aspinwall, he had been seized with intermittent fever, at first tertian, and then quotidian in type. This was checked by quinia at first, then returned at one of the septenary periods, and continued until he reached the hospital. Owing to the disease and to poor fare on board ship, he had lost flesh rapidly. After admission, he had a chill every day, at one o'clock, lasting about half an hour, followed by fever and sweat. He had no appetite, suffered from constipation, was very pallid and feeble, but had no other material sign of disease, except decided enlargement of the spleen. A mild cathartic was exhibited; he was ordered thirty grains of sulphate of quinia in the first interval; milk-punch and beef-tea were given in quantities of a wineglassful every two hours alternately, and, the chills soon ceasing to occur, the quinia was reduced to sixteen grains. Under this treatment the patient improved rapidly and steadily, and, though still pale and weak, he decided to leave the hospital on the 21st.

CASE II. G. S., aged 32, native of Ireland, admitted Nov. 12th, 1864. Has been a seaman for twenty years; was always strong and healthy, weighing about 150 lbs., but addicted to the use of alcohol to excess. About eight weeks before admission, whilst his ship was in the port of Aspinwall, was seized with intermittent fever, of a typhoid type, which was checked by the use of quinia. Soon after this, his legs became dropsical, so that when the vessel left Aspinwall he was disabled from

duty. During the voyage to Philadelphia, the fare on board ship was very poor, so that when he reached the hospital he was greatly reduced in flesh and strength. He now had anasarca of the lower extremities and of the trunk; ascites; excessive tympany; copious, watery diarrhoea; pallid, cool, and moist skin; pinched and anxious countenance; pulse 88, and feeble; respiration 36, and labored. The tongue was coated, and the appetite not bad, but he could take only small quantities of food, owing to the gastric distress which it caused. The spleen was enlarged and tender on pressure. No abnormal sounds in the lungs; heart sounds healthy. The urine was normal in amount, alkaline, specific gravity 1013, highly albuminous, containing in the nebulous deposit many pigment flakes and granules of variable size and color, usually reddish-brown. Blood drawn from the finger exhibited under the microscope more than the normal proportion of white corpuscles, with several pigment granules in each field. The red corpuscles appeared gelatinous, and not only gave up their coloring matters in the added water, but, for the most part, entirely dissolved, or left only a filmy residue.

He was ordered sulphate of quinia, eight grains daily, compound spirits of juniper, two drachms four times a day, infusion of juniper, half a pint daily, and a diet of milk-punch and essence of beef, a wineglassful every two hours alternately. Laudanum enemata were occasionally given to check the diarrhoea. His condition remained much the same under this treatment, when his friends, in spite of his extreme illness and exhaustion, removed him from the hospital on the 24th of November.

CASE III. W. L., sailor, aged 23, native of New York, was admitted November 12th, 1864. Five weeks before admission he had sailed from Aspinwall, after lying in that port during about four weeks. Whilst in port, and engaged in cleaning the paint on the ship's sides, he was overcome with heat and exposure, was seized with headache, rigors, pain in the back, and diarrhoea, so as to be forced to take to his bed. During the passage home, which lasted five weeks, he had poor and insufficient food, was very weak, unable to do duty, and, in addition, his malarial disease became scorbutic, so that he was emaciated, and had sores on the wrist, hip, sacrum, and back. When brought to the hospital, he was in a condition of profound cachexia. The pulse was frequent and feeble, the skin not very hot, the urine scanty, the feet oedematous, and he was excessively feeble. The heart and lungs presented no marked symptoms or signs of disease.

He was ordered quinia, four grains every four hours, tincture of chloride of iron, ten drops every four hours, milk-punch and beef-tea, of each a wineglassful every two hours alternately. He was also allowed spinach, onions, and lemonade. He had an opiate at bedtime. The bowels were moved by an enema when necessary. He improved slightly at first, then sunk again, and died November 18th.

Autopsy (from notes by Dr. Rhoads,) fourteen hours after death.—Figure of medium height; extreme emaciation and pallor; ill-conditioned ulcers over prominent osseous points; rigor mortis very slight; muscles atrophied; feet œdematous.

Thorax.—Pleura smooth, clear, and healthy throughout; one pint of limp, straw-colored fluid surrounding each lung; about one ounce of similar effusion in the pericardium; heart flabby, slightly dilated, distended; in the left ventricle a soft, gelatinous, dark coagulum, with colored serum; in the right ventricle and auricle, extending through the tricuspid and pulmonary valves, intertwining with the cords and adhering to the walls, a firm, white, fibrinous clot. Lungs in posterior inferior portions hypostatically congested and imperfectly expanded, but everywhere inflateable.

Abdomen.—Peritoneum smooth and clear, containing nearly six ounces of serous fluid.

Liver.—Firm, of a dark bronze color; weight four and three-quarter pounds; section surface mottled by the marked congestion of hepatic veins; gall-bladder partially filled with bile.

Spleen.—About twice the natural size; weight twelve ounces; soft; almost black.

Kidneys.—Not enlarged materially; cones congested; conspicuous in section.

Bowels.—Pale; no ulceration or thickening of their mucous membrane. The epithelium in the colon disposed to separate as from the healthy membrane after maceration.

Mesenteric glands.—Healthy in appearance.

Microscopic appearances.—The splenic pulp presented its usual elements, with a large excess of blood. Corpuscles unchanged, or in various conditions of disintegration. Scattered in great abundance over the field, both free and within the nucleated corpuscles, pigment granules, irregular in shape and outline, rounded or angular, varying in color from absolute black, with the strongest light, to the lighter shades of reddish-brown at the edges or throughout, and in size from the 100th of a line in diameter to a mere point.

Liver.—Hepatic cells healthy. Pigment grains everywhere

present; somewhat less numerous than in the spleen. They were not observed within the cell walls.

Kidneys.—Epithelial cells enlarged; incipiently fatty. More engorgement of the straight capillaries in the medullary than of those in the cortical portion. Similar pigment granules to those in the spleen and liver, but much less numerous.

Blood in cardiac cavities.—More than the normal proportion of white corpuscles. Marked deficiency of fibrin (except in old clot on right side). Red corpuscles individually much darker than in health; their coloring matter readily passing into and tinging water, on the addition of that fluid. Several pigment granules in each field.

Heart.—Muscular fibres healthy; capillaries filled with blood; an occasional aggregation of fine granules visible.

The *lungs* exhibited much pigment, but an excess over that usually found in the organs could not positively be affirmed.

Remarks.—Dr. Frerichs states that in individuals who die from the effects of marsh poison, there are frequently found peculiar changes in the liver, spleen, brain, kidneys, and blood, which evidently belong to the disease resulting from that poison. Believing that these discoveries have not been brought before the medical public of this country, as they deserve to be, I shall, in as few words as possible, quote them on this occasion.

The most important of these pathological appearances are the following:—The liver presents a steel-gray or blackish, or, not unfrequently, a chocolate color. This change in color is caused by pigment matter which is accumulated in the vascular apparatus of the gland. The larger part of the pigment is found in the capillary network of the portal and hepatic veins, but it is also found, in most cases, in the branches of the hepatic artery. The hepatic cells are said, by Frerichs, to remain exempt, he having in no case, observed any pigment in them, as has been asserted by Virchow. It is stated, however, in a note, that, after extravasations of blood into the hepatic parenchyma, deposits of red, brown, and black pigment in the cells are not unfrequently met with. In one case of cirrhosis he met with extensive masses of this nature. The cells were found either normal, or filled with brown bile; or sometimes infiltrated with oil, and occasionally, but only after a long continuance of the disease, they contained colloid or lardaceous matter.

In acute cases the size of the organ is either normal or enlarged; at later periods it diminishes in volume and undergoes a true atrophy, unless it have been infiltrated with colloid matter a condition which was met with only in rare instances.

The spleen undergoes similar changes. It is dark brown, or sometimes bluish-black, and its parenchyma contains large quantities of the same pigment as that found in the liver. In acute cases it is enlarged, softened, and congested. In less severe cases its volume is not much changed, unless, as seldom happens, it undergoes lardaceous degeneration, in which case its volume and consistence are considerably augmented.

The brain also exhibits the pigmentary deposits. The cortical substance assumes a chocolate or black-lead like hue, whilst the white matter remains unchanged, unless the amount of pigment be excessive, in which event the white matter presents a gray appearance, and its fine vessels resemble brown streaks. Under these circumstances microscopic examination shows the capillaries to be filled with black granules and scales.

The kidneys frequently participate in these changes. The cortical substance shows gray spots, and dark lines may be seen in the pyramids following the course of the bloodvessels. The microscope exhibits pigment matter in the capillaries of the cortical substance, and particularly in the Malpighian bodies, and sometimes isolated fragments are found in the uriferous tubes.

The pigment is also found in the capillaries of the lungs. Dr. Frerichs says it is difficult to distinguish, in older persons, between the pigmentary deposits of another nature found in the lungs and those caused by malarial disease.

The pigment matter is found in abundance in the blood, and particularly in that of the portal vein, and is thence conveyed to the different tissues and organs in which it is discovered. The usual form is that of small, rounded, or angular granules, which are sometimes isolated, or more frequently connected together in groups by a pale substance, soluble in acetic acid and caustic alkalies. True pigment cells are observed along with the granules and granular masses, though in somewhat smaller quantity. They resemble in size and form the colorless corpuscles of the blood, or they consist of larger spindle or club-shaped cells and rounded nuclei, with sharply-defined walls. These cells contain a greater or smaller number of black granules. The color of the pigment is usually deep black, more rarely brown or ochre-colored, and, least frequently of all, reddish yellow.

It is thought by most observers that this pigment matter is formed in the spleen. Dr. Frerichs is of opinion that, though there are many reasons for such a belief, there is no proof that it may not be formed in other portions of the vascular system.

He believes, however, that there is no doubt the larger portion of the pigment is formed in the spleen.

In malarial disease, particularly, there is every reason to suppose that the spleen is the principal seat of formation of the pigment. During the congestions of that organ, which so constantly occur in this disease, the stagnation of the blood in the venous sinuses gives rise to changes which result in the formation of pigment in the masses of stagnant blood. Frerichs supposes that the club and spindle-shaped pigment cells are the epithelium of the lining membrane of the sinuses infiltrated with the decomposed red matter of the blood, that the globular pigment cells are colorless blood corpuscles infiltrated with molecules of coloring matter, and that the pigment scales are the broken-up fragments of the coagulum.

The results of these changes of the blood in the spleen are admirably drawn. One of the first effects is the production of chlorosis or anæmia, by the destruction of the red corpuscles, and no one who has seen the rapid advance of pallor in a case of unchecked or obstinate malarial disease can fail to be pleased with so admirable an exposition of the mode of production of the phenomenon. The pigment, carried by the spleen to the portal vein, and thence to the liver, is, in part, arrested in the capillaries of that organ, whilst other portions, consisting of the smaller granules and cells, pass on through the liver to the general circulation, and so reach the lungs, brain, and kidneys.

It is this retention of the pigment matter in the capillaries of the different organs by which Dr. Frerichs explains many of the symptoms which accompany certain of the severer forms of the disease. Thus, the retention of the coarser fragments in the capillaries of the liver, by clogging those vessels, gives rise to stasis of blood in the venous radicals of the portal vein. This stasis explains the intestinal hemorrhages and the diarrhœas which so frequently attend the more violent cases of bilious fever. In other instances, in addition to the effusions taking place from the mucous membrane of the alimentary canal, we have serous effusion into the peritoneal sac, occasioning ascites, a result similar in cause and symptoms to the ascites caused by cirrhosis.

The cerebral phenomena, the stupor, delirium, convulsions, or paralysis, which sometimes occur in miasmatic fever cannot, according to our author, be so satisfactorily shown to depend on the retention of pigment in the capillaries of the brain, as the intestinal hemorrhages, diarrhœa, and ascites, have been shown to be the result of hepatic obstruction, but that a con-

nection between the two does really exist, at least in some degree, can scarcely be doubted.

In many severe cases, it was found that the albuminuria and general dropsy present during life, evidently resulted from the obstruction to the renal circulation occasioned by the retention of pigment in the capillaries of the kidneys, and particularly in the Malpighian bodies.

Frerichs states that, considering the great frequency of intermittent fevers, the cases in which there is a marked development of pigment are comparatively rare; hence, in such cases other agencies, of which we possess no accurate information, must co-operate with the usual causes of intermittent fever. In the present defective state of our knowledge as to the nature of infectious diseases, it cannot be determined whether a particular quality, or an unusual intensity of miasm, is necessary for the purpose."—The cases which he has observed and published occurred after an inundation in Selesia, resulting from an overflow of the Oder, in 1854. Since that period cases of this kind have been very seldom observed, although the ordinary forms of intermittent fever are never absent. He remarks that a perfectly accurate diagnosis can only be made by direct examination of the blood. A few drops carefully collected are sufficient to show the presence or absence of large quantities of pigment. He usually collects it by means of a cupping-glass, care being taken to prevent the admixture of foreign matter.

The four cases given above are all well-marked examples of the disease, the pathological results of which Dr. Frerichs describes so well. The first case is one of simple intermittent, arising in one of the higher latitudes subject to marsh miasm, a form easily overcome by proper treatment in the early stage, and yet, even in this case, owing to its being allowed to run on unchecked for some weeks, we found in the blood of the patient, taken from the finger, the peculiar pigment granules described by Frerichs.

The other three cases were of a very different type. Originating in one of the lower latitudes, they exhibit a severity which gives us the opportunity of observing the serious consequences resulting from a dose of marsh miasm of the most poisonous kind. One of the three, though very ill when he reached the hospital, was saved by proper treatment. One was removed from the hospital in a condition which precluded all reasonable hope of his recovery. The third died. This case presented all the severest effects which result from the action of

the malarial poison on the human economy; periodical fever, rapid loss of strength and flesh, with sudden production of anæmia, and, somewhat later, diarrhœa, ascites, anasarca, in connection with albuminous urine, general cachexia, and death. With Dr. Frerichs's work before us it is easy to understand the successive steps of these changes. The congestion and stagnation of blood in the spleen explain, by the actual destruction of the red globules, the speedy induction of anæmia. This condition is also greatly favored, in all probability, by the failure of the globule-making function of the gland. As the destruction of the globules proceeds, their red matter is converted into pigment, which pigment, in its various forms, is carried into the vascular apparatus of the body. Deposited in the liver it may accumulate to such an extent finally as to impede the portal circulation and give rise to diarrhœa and ascites. Lodged in the vessels of the kidneys, and especially in the Malpighian bodies, it may cause a like impediment in those organs, and there is developed a true albuminuria with its consequent anasarca. In the third case given above we had all these conditions. Pigment in the liver, with diarrhœa and ascites. Pigment in the kidneys, with albuminous urine and anasarca.

The lessons as to treatment to be drawn from these discoveries are simple. The beneficent action of cinchona can scarcely be raised higher than before, but its precise mode of action is more clearly developed. Its antiperiodic power is that which makes it invaluable. By cutting off the paroxysms it prevents the repeated congestions and stagnations of blood in the spleen, and thus arrests the destruction of the blood in that organ, and the consequent production of pigment, which is the obstructive agent carried into the more distant organs of the body. The one most valuable therapeutic law taught by these facts is the necessity of applying the saving agent early in the case. When so used it averts the disastrous effects of repeated paroxysms, and thus saves life as clearly and distinctly as does a surgical operation in a case where no other course of procedure is possible. Reason deduces this result as plainly in the former case as the eye beholds it in the latter.—*Am. Jour. Med. Sciences.*

A NEW medical school is announced at Cairo, Ill., by Dr. Jos. N. M'Dowell, late of the Missouri Medical College, and Dr. C. W. Dunning, both of whom will be professors in the new school.—*Boston Med. & Surg. Jour.*

ON THE USE OF CHLOROFORM AS AN INTERNAL REMEDY.

BY A. P. MERRILL, M.D.

Since the publication of my *Lectures on Fever*, in which I have made frequent reference to the use of chloroform internally, I have received numerous inquiries upon the subject, which can best be answered, perhaps, by publishing more in detail some of the cases in which I have employed the remedy.

When it comes to be acknowledged, as I have little doubt it will be, that certain ailments commonly called blood diseases, are to be promptly relieved by a remedy which is supposed to act specifically upon the nervous system, there may be reason for revising some of the favorite doctrines of modern teachers. And when vascular engorgements are found to be more under control of neurotic remedies than the lancet, it will afford pathologists an apology for reconsidering certain dogmas hitherto well received. We may even venture to hope, that after the proper effects of chloroform are ascertained, better discriminations will be made in certain diseases between cause and effect. Fever, local congestion, and other forms of disease affecting the circulation of the blood, secretion, absorption, and nutrition may be traced to causes acting primarily upon the nervous system, the changes resulting to fluids and solids taking their places in the category of secondary effects.

But the true value of chloroform as an internal remedy, and the changes in theory and practice to be effected by its use, must be determined by more extended observations. I have witnessed its remedial effects in a sufficient number of cases to justify me in laying the subject before the profession, and with the hope that it may become the instrument of important improvements in therapeutics. It may not be too extravagant to expect the most beneficial effects from it in the inceptive stage of all forms of congestion from any cause whatever. When arising from the influence of local irritants, as in gastric engorgement, worms, teething, &c., it must, of course, be expected that the relief obtained will not be permanent without the removal of the cause. But there is good reason to believe that, even in such cases, general convulsions and cerebral congestion may be suspended by full doses of chloroform, affording time and opportunity for the action of other remedies, and without which temporary relief death would be inevitable.

Such is the power of chloroform, when taken into the stom-

ach, over every kind of convulsive movement, and such the certainty of relief to every form of congestion, that it would appear reasonable to infer that there is a necessary connection between the two, placing them in the relation of effect and cause. It is difficult to understand, otherwise, why in one case congestion should be relieved by the remedy, and why in another the same treatment should relieve, equally, the convulsive movement depending upon local irritation.

Objection is sometimes made to the introduction of unmixed chloroform into the stomach, on account of its highly excitant quality. But experiment proves it to be much less stimulating to the mucous membrane than to the skin, and in no case have I observed anything more than very temporary effects upon the mouth and throat, which soon subside. The vehicles we are advised to employ in its administration can only hold the remedy in temporary suspension, and in most of the cases requiring large doses, it is quite impossible for the patient to swallow them. Sometimes a single drop falling into the folds of the neck will cause vesication, while a fluid-drachm passing into the stomach gives only a slight inconvenience by its stimulation of the mouth and throat. In the case of a child, five weeks old, to whom I gave from one to three drops mixed in breast-milk, several times a day for five successive days, the tongue became red and a little swollen, and there was at times some difficulty in swallowing, but these troubles soon disappeared when the medicine was suspended.

As in the administration of other remedies, the dose of chloroform must be varied according to the nature of the case, and more than with most other remedies may be the range of quantities given. I have administered it in doses of a single drop to two fluid-drachms, and have sometimes repeated it at short intervals; and I have reason to believe that the cases of infantile convulsions in which I have given from one-half to a full drachm, might have been relieved in the inception of the disease by fifteen or twenty drops. But when convulsions have continued for an hour or more, the smaller doses will have no perceptible effect. Indeed, relief in such cases is obtained only by such quantity as will produce sleep. As long as the eyes continue wide open there is only partial success, but when the eyelids close it may be considered evidence that the system is well under the influence of the remedy; and it sometimes happens that a considerable part of the dose is eructated, in the form of vapor, while the patient sleeps. The sleep continues from one to four hours, and is sometimes followed by great

restlessness and jactitation for an hour or more, when the patient is at ease again and sleep returns.

CASE I. In the summer of 1852, I met a man on the street, in Memphis, in search of a physician for his child, who, he said, was suffering with a convulsion. I took him into my cab, and drove with him about a mile, where we found a little girl, about three years old, in a violent and general convulsion, which some of the bystanders thought had continued, with little abatement, for three hours, but the parents of the child estimated the time at less than two hours. Her jaws were clinched, and there was foaming at the mouth. Believing the case quite desperate, I requested the attendant to seize and elevate the lips, into which I gradually poured a full teaspoonful of chloroform. It was some time in reaching the throat, but as it did so the child swallowed several times, and I felt assured the whole had reached the stomach. In about five minutes the fingers and toes were relaxed, and in a short time afterwards all the spasms ceased, the eyes were closed, and some of the attendants pronounced the child dead. The pulse, which had been until now wanting, slowly returned, and I sat by her for more than an hour watching the result, when the child opened her eyes and, looking round the room with surprise at the number of persons present, called her mother and said, "give me some bread and butter." I prescribed calomel, and for several days small doses of quinia, and she recovered.

CASE II. The same season, I observed a crowd of men and boys in the street, and upon inquiring the cause, was told a man was dying of sunstroke. With some difficulty, I found my way to him, and found a strong, athletic laborer lying insensible, foaming at the mouth, with stertorous breathing, cold feet and hands, eyes open, pupils dilated, and slow, feeble pulse. Having caused him to be turned upon his back, and wiped away the froth from his mouth, I poured from a vial into his clinched teeth a teaspoonful or more of clear chloroform, which, after some delay, he swallowed. The relief afforded was soon perceptible, and in half an hour he was so far recovered as to bear removal to a hospital, where he remained for several days and was then discharged, cured.

CASE III. Mrs. S., an elderly lady, very fat and plethoric, sent for me to prescribe for her in "a fit of cramp colic." She had been subject to such attacks for many years, but had always found relief in the use of her own remedies, without medical aid. This attack had been more severe and longer continued than usual, and she had become alarmed. She was

writhing with pain at the pit of the stomach, upon which she pressed violently with her hands. Her extremities were cold and purple, pulse barely perceptible, and eyes bloodshot. She had taken largely of laudanum, camphor, peppermint, and brandy, all which she believed had been vomited up. Sinapisms and hot footbaths had also been tried, and several active enemata. I gave her a teaspoonful of chloroform, which, giving only partial relief, was followed in half an hour by as much more. In a few minutes after the latter dose, she complained of nothing but an inability to keep her eyes open, and expressed the fear that she might die of the effects of the chloroform in the impending sleep. But she soon slept in spite of herself, and awoke, at the end of five hours, quite well. Three years afterwards, she told me she had had no return of the disease.

CASE IV. A man, aged about 30 years, represented to me that he was by trade a finisher, working mostly at a table, seated on a stool; that he was subject to epileptic fits, which generally attacked him while at his work, and with only a few seconds' premonition. I asked him if he would have time to take a teaspoonful from a vial after the first sign of an approaching attack. He thought he should. So I provided him with an ounce vial of chloroform and a teaspoon, directing him to keep them always on hand while working. He told me some months afterwards, that he thought he had warded off two attacks by taking each time, when threatened, a teaspoonful of chloroform, but that he had had several fits in spite of the remedy. A week or two after this conversation, his wife came running to me in great excitement, saying, "O Doctor, the medicine you gave my husband has poisoned him, and he is dying." Upon inquiry, I was satisfied that he was only asleep, and giving this assurance, she returned to him. He afterwards informed me that, having mislaid his spoon, he had, on feeling a premonition of attack, seized the vial of chloroform and drank off its contents, but he had no definite idea of the quantity taken. He had slept about five hours without convulsion, and several months afterwards had not been again attacked.

CASE V. In the *Memphis Medical Recorder*, for May, 1856, vol. iv., page 375, I made the following note:—"A case of intentional poisoning, by taking six grains of strychnia, is related in the *St. Louis Medical Journal*, in which the patient was very promptly relieved by two doses of chloroform, a small teaspoonful each. Free emesis had, however, been previously produced by tickling the throat with a feather, which the reporter thinks could not have done much good, as the poison had

already, and for a considerable length of time, produced its characteristic effects upon the nervous and muscular systems. The same journal contains a suggestion, that chloroform is an antidote to lead-poisoning, in still smaller doses; but should there be good reason to expect antidotal effects in either case, we might venture to make a more sure use of them by increasing the quantity given, particularly in urgent cases."

In the succeeding number of the *Recorder*, I reported the following case:—

"We had an opportunity, recently, to test the power of chloroform as an antidote to the toxical effects of strychnia, in a patient who had taken an overdose of the latter, which had been prescribed for diarrhoea. From all accounts, the dose could not have been a large one, but there may have been cumulative influences from previous use. At any rate, the spasmodic action was violent, general, and long-continued. A teaspoonful of chloroform was introduced into the mouth with difficulty, through the clinched teeth, which caused, in a few, minutes a perceptible degree of relaxation, accompanied by sensation of chloroform vapor from the stomach; but the spasmodic action continuing in the limbs, a second spoonful was administered, and in a few minutes afterward the patient was fully and permanently relieved."

This patient, as we now remember the case, was a girl about five years of age.

CASE VI. A daughter of Mr. C., of Memphis, aged about two years, was taken with a convulsion, while riding in a little hand-carriage, supposed effect of a chill, although the child had not had chills previously. When I arrived, her mother and others thought the fit had continued two hours. She had been several times in a hot bath, sinapisms had been extensively applied, and a physician was administering chloroform by inhalation, without effect. The pulse was barely perceptible, the eyes open and bloodshot, pupils dilated, skin of a purple color, jaws clinched, fingers and toes tightly drawn inward, and the whole frame severely convulsed. I administered a teaspoonful of chloroform by the mouth, the physician present admonishing me of the probable violence to the mucous membrane and of her inability to swallow, and a few minutes afterward as much more was given by enema. Very soon she was quite relieved of all spasmodic action and in a sound sleep. A dose of calomel at night, and quinia for several successive mornings, completed the cure.

CASE VII. A child of Mr. M., in October, 1863, had a severe

paroxysm of fever. The next day, while laboring under what appeared to be a slight chill, I prescribed for it. In half an hour afterwards, the child was seized by a convulsion, which had continued about half an hour when I returned to it. I gave at once half a teaspoonful of chloroform, and in about ten minutes the child was relieved of all spasms and in a sound sleep. While thus sleeping, the stomach and small intestines were distended with gas, attended by considerable rumbling, all which was partially relieved in about half an hour, by free eructations of chloroform vapor. With the usual quinia treatment the child was soon well. It was about eighteen months old.

CASE VIII. In 1854, Mr. S. was seized with a severe chill, which, when I arrived, had continued about one hour. I found him covered with blankets and surrounded by hot bricks, drinking hot brandy toddy. He complained of pain in the head, was very restless, and groaned with internal distress. His eyes were red, his pulse depressed, and he had had two watery stools. I gave him a large teaspoonful of chloroform, removing at the same time all hot applications, and suspending the brandy. The chill soon subsided, and only slight febrile reaction followed.

CASE IX. Mr. M., of New York, was taken with a chill soon after rising in the morning. I found him by a large fire, shivering, restless, and complaining of pain in the head, back and limbs. I gave him a teaspoonful of chloroform, and got him undressed and in bed. He was then only partially relieved, and the dose of chloroform was repeated. This relieved the chilly sensations, but he still had headache. Soon afterward he slept for an hour and awoke much better. Only slight febrile action followed. Quinia and arsenic were given and a recurrence of the chill prevented.

CASE X. A gentleman upwards of sixty years of age, long resident in a malarial region, had suffered frequent attacks of intermittent fever, and had used quinia until it seemed to have lost its effect upon him. Latterly his chills were obscure, and attended by partial blindness. I advised chloroform in doses of half a teaspoonful in the inception of his attacks. This always gave relief, and finally overcame the tendency to disease without any other remedy.

CASE XI. A young married woman about six weeks pregnant suffered with distressing attacks of asthma. Full doses of chloroform invariably gave relief.

CASE XII. One of the most remarkable of all the cases noted is that of Laura Bateman. This little girl, $5\frac{1}{2}$ years old, had been salivated to such an extent as to cause the loss of consid-

crable portions of the alveolar processes of the lower jaw, and her neck was scarred with scrofulous ulcers. She was taken with a convulsion on leaving the street cars with her mother on Sixth Avenue at 27th Street, and brought thence in a carriage to Leroy Street. On my arrival she had been uninterruptedly convulsed, as stated by her parents, full two hours—subsequently they estimated the time at three hours. The convulsive movement was very general, affecting the limbs, the fingers and toes, the muscles of the face and neck, the eyes, &c. Her hands were cold, but her feet were immersed in a hot mustard bath. No pulse could be felt at the wrist, the face, and especially the forehead, was dark with capillary congestion; the eyes were bloodshot and wide open, with dilated pupils; her breathing was labored and stertorous; her jaws clinched, and she foamed freely at the mouth. She had evinced no sign of consciousness, had swallowed nothing, and had no other remedy than the mustard foot-bath. I poured full half a drachm of chloroform within her lips, which were elevated to receive it. It found its way slowly through the teeth, and was, with a convulsive effort, swallowed without any loss. In one minute all the convulsive movements were lessened, and remarked by the attendants. Still there remained considerable spasmodic action, and the eyes were unaffected. The dose of chloroform was repeated in few a minutes, and almost instantly her eyes were closed, and no spasm remained, except that her arms were straightened and rigid. As she slept, however, I did not repeat the remedy. Her pulse was now considerably excited, but soon after became slower and more regular, and I left her. The next day she showed little evidence of the fearful attack, except that one-half of one eye was still suffused.

On the thirty-fifth day afterwards, at the same hour, this child had another attack of the same kind. The convulsions had continued exactly two hours when I saw her, and she seemed more prostrate than in the previous attack. Besides being pulseless, and showing signs of extensive congestion, the pupils were more dilated, and there was rattling in the throat. The whole aspect of the case, indeed, impressed me with the belief that death was impending and inevitable. I gave her a full teaspoonful of chloroform, which was swallowed with some difficulty. Very little abatement of the symptoms followed, and the eyes remained open, with violent convulsive movements of the eyeballs. After waiting twelve minutes, a half teaspoonful more of chloroform was given, and immediately the eyes were closed and the convulsions ceased. Still there was much rat-

ting in the throat, the pulse was only perceptible, and her breathing so difficult at times that it seemed necessary to change her position to facilitate the entrance of air into the lungs. All these matters gradually improved, however, and in an hour and a half I left her in a quiet sleep. With the usual quinia treatment she recovered, but somewhat more slowly than before.

CASE XIII. In June, 1865, I was called, casually, to see a middle-aged lady said to be suffering with convulsions. I found her lying on the floor partially convulsed, her teeth clinched, insensible, eyes open, pupils dilated, convulsive twitchings about the face, groaning, and with both hands pressing firmly upon the epigastrium. She was very corpulent, with short neck and protuberant abdomen. I introduced into her mouth, with some difficulty, half a teaspoonful of chloroform, by which she was partially relieved and quieted, but remained insensible and speechless. Ten minutes afterwards the dose was repeated, and in a few minutes she came to herself and said she was much relieved. She represented the attack as having been preceded by sensations of chilliness and fulness of the head, especially the occiput, but that she did not consider herself much indisposed. She had suffered in the same way several times before, and on one occasion relief was obtained only after five or six hours.

These few cases, taken pretty much at random from my practice in Memphis and New York, will serve to give those who have not tried it some idea of the power of chloroform over certain abnormal conditions of the nervous system; and, perhaps, the publication of them may induce other physicians to give more attention to the subject than they otherwise would have done, in which case my object will have been answered. The largest benefits are likely to result in cases of chill, enabling us, possibly, to overcome by this means the incipient stage of fever, even in its most fatal and epidemic forms; for, if the position taken in my published lectures be the correct one, in regard to the gradual accession of all forms of idiopathic fever, it may be hoped that a remedy, which so completely controls it in the cold stage, can be so used as to very much lessen if not prevent its necessary fatality.

I have not had proper opportunities for testing the efficacy of chloroform internally in cases of poisoning by strychnia, opium, and other articles which are supposed to act by causing congestion in the brain, spinal cord, ganglions and plexuses, but its effect upon congestion induced by the cause of fever is such as to justify the expectation that it will be found

useful in these cases also. In gastric and uterine congestion, dysmenorrhœa and puerperal convulsions, I have reason to believe the remedy scarcely less efficient than in the cold stage of fever. And we may hope for good results from its use in apoplexy and paralysis. It should be at once popularized as a remedy for infantile convulsions and sunstroke, which often prove fatal before medical aid can be provided, and also in cases of gastric congestion from the use of cold water when the system is heated by exercise; and certainly no restraint should be imposed upon the sale of chloroform in small quantities by druggists.—*Am. Jour. Med. Sciences.*

ANÆMIA AND ANÆMIAC PALPITATION.—PHYSIOLOGY OF THE BLOOD—ABSTRACTS AND COMMENTS.

By DAVID WOOSTER, M.D., ETC.

Anæmia has been long known to be associated with palpitation of the heart, but precisely how it is the cause of palpitation, is not clearly understood. Properly speaking, there is but one cause of palpitation, and that is lesion, either functional or organic, of the pneumogastric nerve, which is the acknowledged regulator of the heart's rhythmical motion. Anæmia, to affect the heart's rhythm, must first affect the pneumogastric nerve, and hence the study of palpitations becomes a study of innervation or ganglionic nutrition, and this leads us directly to the investigation of the physiology of the blood itself. Anæmia is by no means a word expressing a definite pathological condition. For example: the blood is composed of red and white globules and of plasma; the plasma consists of fibrine and serum; the serum, of albumen, certain salts and water. By anæmia we surely do not mean a deficiency, or lack even, of all these substances; for, on the contrary, in the disease recognized as anæmia there may be merely diminution of red globules—this would constitute *globulia* only; there may be lack of albumen, which would constitute an *albumenæmia*—and so with all the constituents which go to make up that heterogeneous current of evil and good we call blood. It will be remembered, blood is not merely material of which organs are to be made and repaired: it contains not merely living, but also dead matter. In its purple current are mingled the products of destructive metamorphosis and the elements which are to repair this destruction and

waste. The employment of a concrete term to express several discrete facts is not scientific.

When the mass of the blood is considerably or repeatedly diminished, when the globules are relatively or absolutely diminished, when the watery part of the plasma becomes excessive, when the albumen of the serum falls below its physiological limit, there occur a set of symptoms which we call *anæmia*. In this sense, chemically and histologically, *anæmia* is total, globular, albuminous or hydremic; defect of albumen rarely exists alone; it is followed by consequences at once peculiar and dangerous. The excess of water in the blood is almost always long subsequent to the diminution of globules; it is a very advanced stage of general *anæmia*. The first pathological condition in *anæmia* is defect of globules only.

The causes of *anæmia* exist not in the blood itself, but are various as the means by which the equilibrium of the principles of the blood is maintained; as various as the histo-chemical elements employed in its genesis: as various as the organs or tissues which preside over the formation, destruction, and regeneration of the plastic or globular elements.—(LEE.)

The blood neither lives nor changes itself. There is no such thing as a blood disease. It is merely a secondary alteration, depending on some lesion of nutrition or assimilation. The disease we call *anæmia* is an affection in which the whole organism takes an active part, either through the generic influence of the organs upon the composition of the blood, or through the changes which the altered blood in its turn impresses on the various functions.

As we said above, the blood is not an independent thing—it gives and receives despite itself. The organs and tissues, as Claude Bernard has shown, appropriate by elective affinities the principles of the blood. The blood does not contain all the substances found in the secretions or in the parenchyma of organs; neither gastric juice, bile, nor the genital secretion is found in the blood. The blood furnishes merely the primitive materials; the organ elaborates and modifies them according to its peculiar function. The organ is active, the blood passive. The latter receives indiscriminately, and restores in the same manner, the products of nutritive metamorphosis, and generally in the most simple forms. Of all the elements composing the blood, but one presents a true autonomy: this is the globule.—(VIRCHOW.) The physiologist recognizes in the blood only two essential parts: the globules and interglobular liquid, or plasma.

Plasma deprived of globules and fibrine constitutes serum—

contains, 1st. Albuminous substances (which can only become cause of disease by diminishing so as to alter the physical fitness of the blood.—(C. BERNARD.) 2d. Products of protein bodies. 3d. Flats; and finally, inorganic matter and salts and water.

The red and white globules are the only elements of the blood endowed with vitality. The globules have been compared to living cells: they live, perform their function, and die in the midst of the plasma. However intimate the relation between the plasma and the globules, they possess properties altogether distinct. The plasmic elements may pass into the secretions and tissues; in fact, the entire plasma, except the fibrine, may, under special conditions, become infiltrated into the surrounding tissues; but a globule never passes through the walls of the capillaries in its physiological condition. Bischof says the transfusion of plasma without globules is exceedingly dangerous, and, in any considerable quantity, fatal, whereas the transfusion of globules without fibrine (C. Bernard says) will often restore life to the really dead. The globules are clearly indispensable to the functions of the organs. They are the vital elements of the blood just as cells are of the tissues.

Schwan says the globule has an envelop, a viscous and colored contained substance, and a nucleus. The nucleus is now given up and acknowledged to be an illusion. Schultze denies the envelop, and says the appearance is the result of greater density of the globule at its periphery. The nucleus is only a depression in the bi-concave disc, indicated by a semi-circular shadow and clear space, this dark depression has given rise to the belief in the existence of a central nucleus. Bruelke says the globules have no envelop: that it does not follow because they lose their discoid form in water and become spheroidal, that therefore they have a special membrane. A nucleus is not necessary to the existence of cell; the function of the nucleus is important during the division of the cells and endogenous formations, but its intervention may be omitted and the division proceed directly from the *protoplasma*, which penetrates both the nuclear mass and the fragment.

Schultze denominates *protoplasma*, that substance in which the nuclei repose, including the nuclei. Thus the mass in which repose the nuclei of striated muscular fibres, may be considered the *protoplasma* of cells, although this matter may be merely finely dotted, and not separated by any membrane from the morphosis of the *protoplasma* of the contractile muscular substance. Connective tissue is developed in the same manner at the expense

of the protoplasma. The intercellular substance of this tissue does not result from division or budding of another cell; but it is the product of a continual metamorphosis of the protoplasma of those cells which are in process of growth. The moment the protoplasma loses its vitality it becomes an inert substance soluble in water, and this condition is recognizable by the absence or decrease of nuclei. A blood globule which has no apparent nucleus (depression) is a dead globule, no longer fit for purposes of nutrition. This is the theory of Schultze, but Bruelke says the nucleus itself is *not* indispensable to the constitution of the cell and its reproduction, as remarked above. He says the protoplasma itself possesses the property of contractility. This contractility is visible under three forms in the organism. 1st. Contractility in the striped muscles, that is, in their protoplasm. There is another species of contractile substance found only in inferior organisms—the infusorise, known as *amibes*, seem to be composed entirely of this contractile substance, which is called *sarcode* (flesh like), and which coagulates at 80° F. Kuhne found this substance in the corneæ of frogs, and in pigmentary cells. A third species of contractile movement is found in the vibratile ciliæ, which line the respiratory organs and the internal genital organs of woman. Then there is a molecular movement in the protoplasm of a multitude of cells entirely distinct from muscular fibro-cells. Virchow observed this motion in white globules, Recklinghausen in purulent and mucous globules which are able, by progressive movements, to reach the surface of the membranes.

This is quite distinct from molecular displacements, and is entirely suspended on the death of the cell. If an inductive current be made to pass through these cells the molecular movement ceases, the cells suddenly collapse, exhibiting only nuclei, contraction seems then to depend upon vital manifestation.

The real texture of the red globule may be considered as settled beyond cavil. It is not a vesicle composed of a special membrane. It is composed of a substance which is extensible, very elastic, susceptible of assuming almost any shape under external forces, and of resuming its original discoid form when the force is removed. This is proved by the experiment of Rollet with a concentrated solution of gelatine; in which globules had been artificially brought together; gelatine so charged is partially dried and submitted to pressure under the microscope, when the globules are seen to assume all forms, and even to rupture and disappear on being distended with the solution; but in no case is a collapsed membrane seen, nor any contents ever seen to escape from a vesicle.

Congelation of the globules repeats these phenomena; the depressed portion or nucleus of the globule remains visible longer than the surrounding portion. Static electricity acts like congelation: the globules are for the most part destroyed, and in the blood of some animals hematine crystals are deposited at the same time. Ether produces analogous results: the blood grows clear, the globules smaller and they disappear without rupture.

Finally, it has been demonstrated by Bruelke, Rollet, and more recently by Klebs and Alex. Schmidt, that red globules are contractile bodies, whose contractility may last some hours after death, and that this contractility depends solely upon the *protoplasma*.—(LEE.) All this exactness of research on the physiology of the blood has much to do with the exact diagnosis of disease, and with the simplification of nosology. It will be manifest that treatment must in the main be nutritive—histochemically speaking—and that waste is quite as essential as reparation; or in other words, morphosis and metamorphosis must be equally active.

I am of the opinion that if we study farther we shall find globular lesions to occupy a much more extended range in the production of disease, than has hitherto been attributed to them. Anæmia is a generic term, including many morbid changes, as well as being the exponeat of a well-recognized state of the organism. But it must be borne in mind that the lesion of the globule is not primary, and indeed can hardly be conceived to originate in the globule itself. The altered globules will die—let them, they cannot be restored; but treatment can induce the organism to replace them with normal globules, and to increase the number of the latter, and this will in turn restore the altered functions, and the latter will in turn assist the re-formation of the defective blood. Nothing is more detrimental to the integrity of the blood than continued pain, or mental or moral disturbance; a quiet mind in a body free from pain is the best restorative of the blood; and producing and maintaining this condition is the most speedy way to cure *anæmia* and *anæmiac* palpitations.—*Pacific Med. & Surg. Jour.*

SEWERS AND THEIR EVILS.

The immense extent of the London system of sewerage probably converts the sewers into one enormous cesspool. It was, of course, the decomposition of the animal excrements which

gave rise to the dangerous vapors issuing from the cesspools. Now, if these excrements are allowed, in consequence of the length of the sewers through which they now have to pass, to decompose, as they decomposed in the ancient cesspools, why should not the vapors and gases arising from the decomposition in the sewers produce as noxious effects as they produced when they escaped from the cesspools? We, some years ago, suggested this question, Whether our present system of sewage would not become one enormous cesspool; and whether some special provision ought not to be made for the escape, by high shafts, or neutralization of the products of decomposition? If it be true that the contents of our sewers in London undergo decomposition just as they underwent decomposition in the old cesspools, surely it was something akin to madness to set loose all the products of the decomposition at our very doors and under our very noses. But all this matter requires investigation; and interesting would it be, if we could get some sure information as to the ordinary health of those men who pass many hours in these sewers, and whom we occasionally see emerging from iron traps, with lantern and heavy jack-boots. What effect does the inhaling of the vapors of sewers have upon them? Perhaps some of our readers can tell us something of this; and we may add, that we wish Dr. Fuller had furnished the *Times* with some positive proof that the issue of gases from sewers had injured human constitutions and produced diseases.

Dr. Miller, Professor of Chemistry in King's College, says truly enough, that sewers must be ventilated—*i. e.* the gases must be let out of them—so long as it is necessary for men to pass through them; and he recommends the process of ventilation and disinfection proposed by Dr. Stenhouse.

It consists in suspending charcoal in the ventilating openings. In London, the plan has been carried out by the engineer to the Commissioners of Sewers, with the sanction of Dr. Letheby, and both these gentlemen have reported strongly in its favor. There is placed in each ventilating opening a box, within which are three or four perforated shelves, and on each side of these shelves is a layer of wood charcoal; openings are made at the top and bottom of the box, to allow the free passage of the air; the whole of the air which escapes from the sewer is obliged to pass through the box and over the charcoal before it reaches the outer atmosphere. The offensive and noxious gases are speedily absorbed by the charcoal, and are oxidized within its pores, by which means they are converted into a harmless substance, destitute of odor. "The method is so simple and effect-

ual," says Dr. Miller, "that it ought at once to be put in practice, while yet there is time." * * *

Dr. Herbert Barker, who has proved himself to be a high authority on the subject of disinfection, speaks of ozone as being "Nature's grand atmospheric disinfectant." His observations are of much interest, and the practical conclusions recommended worthy of consideration, especially in reference to this matter of the cholera. We conclude that Dr. Barker has satisfactory proofs of the fact that ozone is really absent in the district where cholera rages, &c. Of course, the full establishment of this fact is very important.

"In the neighborhood of cesspools, all evidence of the presence of ordinary atmospheric ozone is lost. When ozone is abundant in the air, it may be detected on the windward side of a stable, or cowshed, or manure-heap, but not on the leeward side. It may be observed abundantly immediately on the windward side of a town, and not a trace of it discovered at the same time on the leeward side. The ozone test paper, in an ill-ventilated church, when full of persons, will give no reaction. I have evidence from my own experience that the diffusion of ozonized air through the apartments of persons suffering from fevers, is of immense service, in that it keeps the room free of oppression, and effectually destroys the offensive odors arising from the gaseous excreta of the subject. Ozone, in its action as a deodorizer, closely resembles chlorine. It can be employed permanently by a single process with ventilation. Ozone may be prepared by Siemen's cylinder, the air driven through' the cylinder being ozonized by sparks from Ruhmkorf's coil. This method can be adopted only in hospitals, as skilled hands are required for its management. Fortunately, we have a means of generating ozone from phosphorus, which is ready for use at any moment, and with little trouble. Two sticks of phosphorus, each two inches in length, made very clean by scraping, if covered with oxide, and half covered with water, will yield in an hour sufficient ozone, in a room of 3,000 cubic feet, to be detectable by Schönbein's test in every part, and this even when there is good ventilation. The objection to the production of ozone, that there is not a sufficient bulk of water to absorb the fumes of phosphoric acid, may be obviated by using a vessel containing a larger quantity of water, and by floating the phosphorus at the proper depth upon its surface. The degree of evolution of ozone may be tested by a slip of Schönbein's paper. It is very remarkable that, during the prevalence of cholera in any district, ozone has been observed to be absent

in that district; not the smallest trace has been discoverable by the test papers."—*Medical News & Library*, from *British Medical Journal*.

Book Notices.

RESEARCHES ON THE MEDICINAL PROPERTIES AND APPLICATIONS OF NITROUS OXIDE, PROTOXIDE OF NITROGEN, OR LAUGHING GAS. By GEO. J. ZIEGLER, M.D., Physician to Philadelphia Hospital, &c., &c. Philadelphia: J. B. LIPPINCOTT & Co. 1865.

This is a very neatly printed little volume of 66 pages, in which the author discusses the physiological, pathological, and therapeutic properties and applications of nitrous oxide. The book is full of suggestions of an interesting character, and will abundantly repay for the time spent in perusing it, but is very deficient in facts or cases calculated to sustain and illustrate the practical application and correctness of the suggestions made. We have long entertained the opinion that the nitrous oxide gas afforded a most valuable remedy in sustaining the susceptibility of the tissues and the integrity of the blood, in the lower grades of typhoid and typhus fevers, as well as in the pernicious form of intermittents, and in cholera. But owing to the inconvenience of preparation and administration, we have never adequately tested our opinion by practical application. We hope this little work of Dr. ZIEGLER will so far excite the attention of the profession, as to cause the medicinal properties and value of the nitrous oxide gas to be fully tested, especially in cholera, if that disease should prevail in our country the coming spring and summer.

The work is for sale by W. B. KEEN & Co., Lake Street, Chicago.

MATERIA MEDICA FOR THE USE OF STUDENTS. By JOHN B. BIDDLE, M.D., Prof. of Materia Medica and General Therapeutics in the Jefferson Medical College, &c., &c. With Illustrations. Philadelphia: LINDSAY & BLAKISTON. 1865.

This is an octavo volume, of 359 pages, on good paper, fair

type, and containing cuts illustrating many of the indigenous articles of the *materia medica*. It claims to be a simple review or summary of the *materia medica*, designed almost exclusively for the convenience of students, while attending their college courses of instruction. It is written in a clear, concise, and pleasing style, and is well adapted to the purpose had in view by the author.

For sale by S. C. GRIGGS & Co., Lake St., Chicago, Ill.

STIMULANTS AND NARCOTICS, THEIR MUTUAL RELATIONS; WITH SPECIAL RESEARCHES ON THE ACTION OF ALCOHOL, ÆTHER, AND CHLOROFORM ON THE VITAL ORGANISM. By FRANCIS E. ANSTIE, M.D., M.R.C.P., Assistant-Physician to Westminster Hospital, Lecturer on *Materia Medica* and Therapeutics to the School, and formerly Lecturer on Toxicology. Philadelphia: LINDSAY & BLAKISTON. 1865.

This, like the preceding, is a neatly published volume, containing 414 pages. The topics discussed by the author are of the highest degree of interest and importance. But we have, at present, only time and space sufficient to announce the work. It will be noticed more fully at a future time. Meanwhile, it is for sale by S. C. GRIGGS & Co, Lake St., Chicago, Ill.

SPECIALTIES IN MEDICINE. By HENRY D. NOYES, M.D., Surgeon to the New York Eye and Ear Infirmary. Read before the American Ophthalmological Society, June, 1865.

This is an interesting pamphlet of 16 pages, on a topic of general interest.

Editorial.

WM. T. G. MORTON, AND HIS EXTRAORDINARY PRETENSIONS.
—Some two or three weeks since, this gentleman appeared in our city, with letters of introduction to many members of the medical faculty of the city, and was kindly received. He visited the Mercy Hospital, he asked for and obtained the privilege of lecturing an hour to the class in the Chicago Medical College, during which he gave some familiar instructions in regard to the mode of inhaling ether, claimed for it entire safety

and superiority over all other anæsthetics, and closed with a pretended *history* of the discovery and application of anæsthesia to the relief of pain during surgical operations. In the historical part of his discourse, the omissions and perversions of facts were certainly remarkable. His sole aim seemed to be to impress his audience with the fact that Dr. W. T. G. MORTON was not only the first to discover and apply anæsthesia, but to his unremitting exertions and enormous pecuniary sacrifices, made in overcoming the opposition and prejudices of the profession, the world is at this time indebted for all the blessings derived from the use of anæsthetics. Whether he obtained an audience in the Rush Medical College or not, we do not know.

Subsequently he obtained an opportunity to address the Chicago Medical Society, at its regular Friday evening meeting. There he pursued the same course, so far as relates to the history of anæsthesia, wholly omitting some important facts, distorting others, magnifying molehills of opposition into mountains, and whatever else would tend to convey the impression that to Dr. MORTON, alone, is the world indebted for all the blessings of anæsthetics in surgery, obstetrics, and dentistry. He went back to the most remote and imperfect attempts to alleviate the pain of surgical operations by the use of opiates, inebriants, &c., not forgetting to mention the well-known remark of Sir HUMPHREY DAVY in relation to the use of nitrous oxide gas, but not a word escaped his lips by which the most attentive listener would have supposed that either HORACE WELLS or C. T. JACKSON ever lived. Now, what is the moral difference between the deliberate suppression of well-established facts in relation to any subject under public discussion, and the direct assertion of falsehoods?

But the historical part of his discourse constituted only its preface. The theme on which he dilated with the greatest enthusiasm was, the stubborn opposition, the bitter prejudices, and the unjust assaults he had to encounter from the medical profession, in his efforts to bestow upon it and the world the inestimable blessings of his great discovery, and the consequent anxiety, loss of time, destruction of business, and expenditure

of money which he was compelled to bear, in perfecting, introducing, and defending it. Of course, he did not omit to mention, as parallel cases, the honored names of HARVEY and JENNER. To add to the force of his own representations, he had loaded the table of the society with a profusion of pamphlets entitled "Proceedings in behalf of the Morton Testimonial," in which, among many other things, it is asserted over the signatures of two *millionaires* of Boston, "that Dr. MORTON has sacrificed *all his property*, and *all the profits of his profession*, in introducing his discovery, and in establishing his claim, and that he has seriously impaired his health; that he has failed to obtain compensation from the Government for the use of ether in the army and navy, and that he has no hope of any public compensation."

Finally, the conclusion of the lecture brought the pith of the whole matter, namely:—that inasmuch as he had actually sacrificed time, rest, business, money, everything of a material nature, in conferring his great boon upon the world, and after years of patient application both to the legislative and executive departments of the Government, had utterly failed to obtain any remuneration, he was now compelled to appeal from the Government to the people. He therefore clearly indicated to the society his wish that *all* its members would sign an appeal to the wealthy and benevolent citizens of Chicago to make contributions to the "Morton Testimonial," and that a committee be appointed to call a public meeting of citizens, before which Dr. MORTON should present his claims in person. To prevent any unnecessary loss of time, he very kindly and *modestly* laid upon the table an *appeal* already prepared, printed, and pasted upon a blank sheet of paper, in due form for the signatures. To encourage the timid and give faith to the doubting, the flattering idea was thrown out, that their *autographs* would be so much cherished by him in future, while the medal and decorations of honor received from the Governments of France and Russia came *un-ostentatiously* into view. Of course, this printed appeal was carefully worded in such a manner as to make it a full endorsement of all Dr. MORTON's claims, and would have

made a capital addition to the next edition of the pamphlet of "Proceedings in behalf of the Morton Testimonial."

Several members of the society signed that paper, and the committee asked for was appointed. More than two weeks have since elapsed, but we have heard nothing of the proposed public meeting. Without wasting a word on the brazen-faced impudence of all this, let us turn directly to the three important questions involved in Dr. MORTON's pretensions:—

1st. Is he entitled to the credit of having been the first to discover and practically apply anæsthetics to the relief of pain in surgical operations?

There is no fact in human history better established, than that Dr. HORACE WELLS, of Hartford, Ct., commenced investigating the practical application of anæsthetics three years before Dr. MORTON dates his discovery with ether. He chose the nitrous oxide gas, and not only conceived the idea or principle of anæsthesia, but he clearly and successfully demonstrated its applicability, by administering it to patients with the effect of entirely preventing pain during the extraction of teeth. This is fully proved by the dentists and respectable citizens of Hartford. Having proved both its safety and efficiency in Hartford, Dr. WELLS went to Boston during the college term of 1843-4, was kindly received by Dr. J. C. WARREN, who informed the medical class that Dr. WELLS was in the college, that he claimed to have discovered an effectual method of relieving pain during surgical operations, spoke of the importance of the discovery, if it should prove true, and advised the students to see and hear what Dr. WELLS had to say.

Dr. WELLS lectured to the students and others on the subject, and performed some experiments, which excited among them much interest. During the same visit, he obtained the privilege of administering the gas to a patient in the Massachusetts General Hospital, for the purpose of having some operation performed, but through timidity, or some other cause, not enough was given to make the trial successful, and the attempt was reported a failure. Meeting with no encouragement for further trials, he left Boston, doubtless, feeling no little disap-

pointment and chagrin, and returned to Hartford, where himself and other dentists of that city continued to administer nitrous oxide gas as an anæsthetic, with entire success, during the extraction of teeth. It is just here that the professional world has been most deceived in relation to Dr. WELLS. Because he left Boston in the winter of 1843-4, after a single unsuccessful trial of his anæsthetic, he has been persistently represented by Bostonians as having abandoned the effort to use or introduce anæsthetics in surgical practice. But this representation is fully proved to have been devoid of truth, Dr. WELLS never having abandoned the practical application of nitrous oxide gas to anæsthetic purposes to the day of his death. All these facts, in relation to Dr. WELLS, were perfectly familiar to Dr. MORTON, during the years 1844-5-6; and when the latter, in the fall of 1846, went to Dr. C. T. JACKSON, for a supply of nitrous oxide gas, it was with no other thought than to carry out the identical practice of Dr. WELLS. But on being told by JACKSON that ether would produce the same insensibility to pain, and was every way more convenient and manageable, he was induced to try it, and for the first time successfully during the extraction of a tooth, on the 30th of September, 1846; and on the 10th of October, 1846, he gave it with satisfactory results to a patient in the Massachusetts General Hospital, during an operation by Dr. J. C. WARREN. Such is the actual history of anæsthesia up to October, 1846. The entire *discovery* of Dr. MORTON consisted in substituting the use of ether, on the earnest and emphatic recommendation of Dr. C. T. JACKSON, for the nitrous oxide gas of Dr. WELLS. The act of Dr. MORTON bears the same relation to the preceding acts of WELLS, that the subsequent act of Dr. SIMPSON, in using chloroform, did to the use of ether by MORTON.

2d. Did Dr. MORTON, in his efforts to introduce the use of ether as an anæsthetic to the medical profession, meet with such opposition, such incredulity, such prejudice, and such misrepresentation that it required the sacrifice of his time, fortune, business, health, &c., to enforce so great a boon upon the attention of the world?

Let the facts contained in the first report on Surgery made to the American Medical Association, and published in the first volume of the transactions of that body answer.

Dr. MORTON's first administration of the ether in the Massachusetts General Hospital, was on the 10th of October, 1846. On the 3d of November, less than thirty days thereafter, an account of it was read by Dr. HENRY J. BIGELOW, to the American Academy of Arts and Sciences, and on the 9th, to the Boston Society for Medical Improvement, and published by the same in the *Boston Medical and Surgical Journal* for Nov. 18th, 1846. The facts were also communicated to prominent members of the profession in London and Paris. Within six weeks, it had been fully and successfully tested in London, and in three months, it was in familiar use in the Hospitals of Paris, from which its use spread so rapidly over the whole of Europe, that in less than fifteen months Prof. SIMPSON had gathered and tabulated more than 300 cases of the larger amputations alone, in which ether or chloroform had been used. The use of these anæsthetics was adopted a little less rapidly in this country than in Europe, yet, from the report already alluded to, it appears that before the 1st of April, 1848, they were in almost daily use in every public hospital in the United States, and by all the distinguished surgeons North, South, East, and West. And not only this, but they had also been administered in "more than 2000 cases of obstetrics." Thus, within the incredibly short space of eighteen months, the use of anæsthetics had been fully introduced into the practice of surgery, obstetrics, and dentistry, throughout Europe and America, and that too without requiring Dr. MORTON to travel a mile, or expend a dollar, beyond the limits of Boston.

But why was the introduction of anæsthetics more slow in this country than in Europe? Let the able report on surgery, in the first volume of Transactions of the American Medical Association answer. (*See page 181.*) "This indifference to the discovery was probably owing to several causes. One of the *most prominent* of which was the *taint of charlatanism* which attached itself to its early history, and which created a preju-

dice against it, in some minds so strong as to prevent them from giving to the subject a full investigation. This feeling against secret and patented medicines, happily, prevails in the medical profession to a great extent, it is deep-rooted and sincere, and is based upon the highest considerations of public utility; if, in this instance, it was carried too far, the motive was, at least, just and honorable, and *the fault lies more with the discoverers* (MORTON and JACKSON,) *who attempted to conceal the nature of this new agent, under the name of 'Compound Letheon,'* than with the profession." Thus it appears that, instead of opposition and prejudice on the part of the profession, the use of anæsthetics was adopted with a readiness and rapidity, both in Europe and America, unparalleled in the history of all previous remedial agents, and that whatever prejudice or neglect was exhibited towards them, was owing, mainly, to the unprofessional and quackish efforts of Dr. MORTON to conceal the nature of his anæsthetic under the false name of "Letheon," and to make all the world tributary to his pocket by a *patent right*. What disgusting misrepresentation then, for this same individual to be now perambulating the country, pretending to have sacrificed his business, his fortune, his health, and his all, in "*perfecting and introducing*" his great discovery to the world.

Pray what *perfecting* did it admit of, except to procure from the chemist a pure specimen of ether and strip its use of the cumbrous machinery, false names, and patents that Dr. MORTON had attempted to throw around it? The most diligent student of the history of anæsthetics will search in vain for any evidence that Dr. MORTON was ever required to abandon his legitimate professional business a single week, or spend a single dollar of his fortune beyond the cost of a few pounds of ether, in discovering, perfecting, and introducing his favorite anæsthetic to the profession and the world.

As we have already shown, his two first successful experiments were speedily described, endorsed, and heralded over both continents by eminent surgeons in Boston, and, with very few exceptions, accepted and acted upon with avidity by the profession at large. But we are confidently assured that Dr.

MORTON *did* sacrifice his business and his fortune, and undergo an immense amount of labor and anxiety, on account of his great discovery. And we have no reason to doubt the truth of the assertion.

This leads to our third and last question, namely:—For *what, and how, did he* make these great sacrifices?

To every impartial reader of history the answer is obvious. Dr. MORTON'S great primary animating idea was not the conferring of an inestimable boon upon the human race, by adding to our knowledge of the means of alleviating pain, but how to make that knowledge turn, with certainty, a pecuniary fortune into his own pockets. It was present with him before he had made his first successful demonstration, and prompted him to the dishonorable attempt to conceal the nature of his agent under the name of "Letheon." It was this that sent him in hot haste, not only to Washington for a *patent* covering all of this country, but across the ocean for one in England also. When he soon found that neither false names nor patents would enable him to control the coveted pecuniary profits, the same controlling idea constrained him to further abandon his legitimate business and squander whatever fortune was at his command in fees of eminent lawyers, and carrying out, through a protracted period, all the corrupting acts of a *lobbying* career, during the sessions of Congress, for the purpose of inducing the national legislature to endorse his pretensions, by an appropriation of a few hundred thousand dollars. All of which resulted in total failure, as was fitting and proper that it should.

If any of our readers think our remarks severe or captious, let them read the following preamble and resolutions, adopted almost unanimously, in a full meeting of the American Medical Association, held in the City of New York, in June, 1864:—

"Whereas, In the appropriation bill now pending in Congress, is a clause donating to Dr. W. T. G. Morton, of Boston, the sum of \$200,000, as a recognition of his services in introducing sulphuric ether as an anæsthetic agent: and,

"Whereas, The said Dr. Morton, by suits brought against charitable medical institutions, for infringements of an alleged patent covering all anæsthetic agents, not claiming sulphuric

ether only, put the state of anæsthesia, however produced, as his invention, *has, by this act, put himself beyond the pale of an honorable profession* and of true laborers in the cause of science and humanity; therefore,

"Resolved, That the American Medical Association enter their protest *against any* appropriation to Dr. Morton, on the ground of his unworthy conduct, also because of his unwarrantable assumption of a patentable right in anæsthesia; and, further, because private beneficence in Boston, New York, Philadelphia, and other places has already sufficiently rewarded him for any claim which he may justly urge.

"Resolved, That a copy of these resolutions be forwarded to the Chairman of the Committee of Ways and Means." (*See Transactions, vol xv., p. 53.*)

Also the following, which was adopted unanimously, by the American Dental Association, during its annual session, in Niagara, in July, 1864:—

"Resolved, By the American Dental Association, that to Horace Wells, of Hartford, Conn., now deceased, belongs the credit and honor of the introduction of anæsthetics in the United States of America; and we firmly protest against the injustice done to the truth and memory of Horace Wells in the effort made during a series of years, and especially at the last session of Congress, to award the credit to other person or persons."

Now, when Dr. MORTON will come before the profession and the world with a candid, truthful history of anæsthesia, giving to Dr. WELLS, Dr. JACKSON, and all others their just and proper credit, and claim for himself only just what he is fairly entitled to, namely, the credit of having by the suggestion of Dr. JACKSON, substituted for the inconvenient, unportable, and bulky nitrous oxide gas used by Dr. WELLS, the more convenient, portable, and manageable sulphuric ether, and so demonstrated its applicability as an anæsthetic as to, at once, command the attention of the scientific and professional world; and, at the same time, confess that all the business, money, and health he has heretofore sacrificed, has been in unsuccessful efforts, of a quackish and unprofessional character, to secure in some way the pecuniary profits of anæsthesia to himself; we will make a donation to the "Morton Testimonial," and invite all our friends to do the same. Until then, however, we must beg to be excused.

DEATH.—Dr. EZRA A. STEELE, who was associated with us, as assistant-editor, during the first one or two years of the publication of the *MEDICAL EXAMINER*, died at the residence of his uncle, in Marshall, Clark Co., Ill., on the 27th day of October last, aged about 30 years. We had known him intimately from his student days to the time of his death. He was a young man of more than ordinary talent, a physician of good judgment and skill, and a faithful friend. But consumption early marked him for a victim, and though he lingered long, yet, for the last four or five years of his life, he was almost wholly disqualified for active business. He had our warmest sympathies while living, and we extend the same to his large circle of relatives and friends in the hour of their bereavement.

ARMY SURGEONS RETURNED.—We learn, with pleasure, that our old and highly-esteemed friend, Dr. F. K. BAILEY, after serving ably and faithfully as an army surgeon, all through the late war for suppressing rebellion, has returned to his old field of civil practice, in Joliet, where we are sure he will be cordially welcomed by all his old friends and many new ones.

A few days since, we had the pleasure of meeting our former friend and faithful pupil, Dr. C. DUMREICHER, who had just graduated, with much credit to himself, in the spring of 1861. Only a month later, the first gun fired upon Fort Sumter awoke the nation to the realities of a gigantic war. Without waiting for a commission, our young and ardent friend joined almost the first mounted company raised in this State. But his medical attainments were soon called into requisition, and he was commissioned as assistant-surgeon. He served through the entire war with such faithfulness and satisfaction to the War Department, that he was promoted to the rank of Lieut.-Col. by brevet. He has now opened an office for practice in this city, and we hope he will receive all the patronage that his attainments and energy entitle him to.

SOMETHING WRONG.—We understand that since July last, the Surgeon-General has closed all the hospital records and

public archives under his control, against the inspection of all persons outside of official positions. The reason unofficially alleged for this singular course is, that the Medical Bureau is preparing a work for publication, based upon these records, and that the Bureau is vain of being the instrument of the first publication of the facts.

Now, if these records were the private property of the Surgeon-General, procured at his own expense, there would be some justification for his turning his keys against all outside gleaners of facts and history. We suspect that Congress and the people have not authorized any such exclusiveness; and it remains to be seen whether they will approve the policy.

LONGEVITY OF CLASSES.—During the last Parliament of Gt. Britain, there have died 112 peers, the united ages of which amounted to 7583 years, or an average of 67 years each. The archbishops died at the average age of 80; the viscounts, at 74; the bishops, 73; the counts, 68; the marquises, 66; the dukes and barons, 64. The average age of the Scotch peers was 88; of the Irish, 63.

THE NEW ORLEANS SCHOOL OF MEDICINE was to open its regular annual term of lectures on the 13th of November, with many of its old faculty at their posts, and we doubt not but it will speedily attain to its previous prosperity and usefulness.

The Medical School at Nashville, we think, is also progressing in its active career, under the leadership of our old friend, Prof. W. K. BOWLING, who has been one of its faculty through all its days of former prosperity. We rejoice at all these evidences of returning enterprise in the profession of the Southern States.

DEATHS.

TIMOTHY CHILDS, M.D., late Professor of Anatomy in the New York Medical College, died at Norwich, Conn., on the 3d inst., from an overdose sulphate morphia.

SIR WILLIAM HOOKER, an eminent English Botanist is dead.

MORTALITY FOR THE MONTH OF OCTOBER.—The mortality report of municipal health department for the month of October has just been completed, and will be found below. The total number of deaths for the past month, as here reported, is 360, showing an increase of 90 over the corresponding month of last year. This increase is partly caused by the frequency of those diseases resulting from sudden and varying changes of climate, such as have prevailed during the month past; but it is chiefly owing to the remarkable growth of vegetation during the past season, owing to the lateness of the frosts, and which becoming rank, caused the prevalence of miasmatic and other vapors, inducing a state of atmosphere especially tending to produce disease:—

DISEASES.

Accidents,.....	7	Inflammation of Lungs,.....	4
Apoplexy,.....	1	Intermittent Fever,.....	1
Brain Fever,.....	3	Lung Fever,.....	1
Bilious Fever,.....	7	Liver Complaint,.....	1
Cholera Infantum,.....	2	Lung Disease,.....	2
Cholera Morbus,.....	2	Lockjaw,.....	1
Congestion of Brain,.....	1	Marasmus,.....	1
Congestion of Lungs,.....	2	Nervous Fever,.....	7
Cold,.....	2	Old Age,.....	8
Cancer in Head,.....	1	Paralysis,.....	2
Childbirth,.....	6	Rheumatism,.....	1
Congestion of Bronchial Tubes, ..	1	Stomach Disease,.....	1
Consumption,.....	32	Suicide,.....	1
Convulsions,.....	6	Stillborn,.....	9
Cramps,.....	18	Summer Complaint,.....	14
Croup,.....	4	Scrofula,.....	1
Decline,.....	1	Ship Fever,.....	1
Delirium Tremens,.....	1	Spasms,.....	1
Diarrhœa,.....	11	Sore Throat,.....	7
Diphtheria,.....	36	Scarlet Fever,.....	7
Dropsy,.....	6	Typhoid Fever,.....	15
Drowned,.....	3	Typhus, ".....	2
Dysentery,.....	9	Teething,.....	18
Erysipelas,.....	1	Tumor,.....	2
Green Canker,.....	1	Water on Brain,.....	1
Head Disease,.....	1	Whooping Cough,.....	2
Heart Disease,.....	3	Unknown,.....	33
Hemorrhage,.....	1		
Inanition,.....	1	Total,.....	360
Inflammation of Bowels,.....	10		

AGES OF THE DECEASED.—Under 5 years, 196; over 5 and under 10 years 33; over 10 and under 20, 13; over 20, and under 30, 23; over 30 and under 40, 37; over 40 and under 50, 18; over 50 and under 60, 12; over 60 and under 70, 10; over 70 and under 80, 10; over 100, 1; unknown, 7. Total, 360.

NATIVITIES,

Chicago,.....	193	England,.....	8	Sweden,.....	7
Other States,.....	73	Germany,.....	32	Italy,.....	1
Bohemia,.....	1	Ireland,.....	31	Unknown,.....	4
Canada,.....	3	Norway,.....	3		
Denmark,.....	2	Scotland,.....	2	Total,.....	360

REVIVAL OF MEDICAL LITERATURE AND MEDICAL SCHOOLS IN THE SOUTH.—We have received an announcement, saying that the January number of a new journal, called the *Richmond Medical Journal*, would be issued early in December, to be edited and published by Drs. E. S. GAILLARD and W. S. MCCHESENEY. It is to be published monthly, containing from 80 to 90 pages, with a subscription price of \$5.00 per annum, payable in advance. We recognize in the name of Dr. GAILLARD, an able and ready writer, and have no doubt but the journal, under his management, will be abundantly worthy of the patronage of the profession. We add it to our exchange list with much pleasure.

We have also received the following printed circular, which we insert in full:—

SIR:—I propose to edit and publish, in Memphis, Tennessee, *The Medical and Surgical Monthly*. The size of the journal will be not less than quarto; though I anticipate, from the encouragement of others and yourself, to give each month, to a large number of subscribers, not less than 64 pages of printed matter, interesting to mediciners, and important to patients. I will endeavor to give to the journal a character not unworthy either of the locality or the age of its publication.

Will you please to interest yourself in this matter, and return to my address, at an early day, the names of subscribers?

If this request is promptly and extensively responded to, the first number of the journal will be published in January, 1866.

Subscriptions will be received for six months, and one year: One year, Twelve Numbers, \$6.00; One-half year, Six Numbers, \$4.00.

Very Respectfully,

FRANK A. RAMSEY, A.M., M.D.,
Memphis, Tenn., Oct. 19th, 1865. No. 5 Adams St.

MILITARY SURGERY IN FRANCE.—A work of paramount importance, modestly called a Report to the Medical Board of the Army, has lately been published by M. Chenu, a high authority in the Medical Department. It is entitled, "A Medico-Chirurgical Report on the Flying and Stationary Hospitals of the French Army, during the Crimean Campaign." It has no less than 800 quarto pages, and more than 100 tables and statistical computations. The author, says the *Gazette Medicale de Paris*, has been anxious to publish facts, irrespectively

of every consideration; and we doubt not that the book will be eagerly sought by military surgeons in this country, as Mr. Longmore's is in France.' M. Chenu is extremely minute in his classification, both as regards the field and hospitals; and the labor bestowed must have been immense. The comparative mortality of the French and British armies is thus stated:—

	French Army.	British Army.
Effective men,-----	309,268	97,864
Deaths,-----	95,615	22,182

The work is divided into numerous parts, including all the injuries and diseases which have been observed. Wounds from gunshot occupied much of the author's attention, and he dwells particularly on the fact that such wounds, owing to the peculiar firearms now used, are more serious, and more frequently met with than formerly. Herein, he quite agrees with Inspector Longmore, who states that the army of the Duke of Wellington, on the 16th, 17th, and 18th of June, 1815, including the battle of Waterloo, had 8000 wounded, whilst at Solferino, the Franco-Sardinian army had 16,000, and the Austrians 21,000. Hence, the necessity of increasing the surgical material and the medical officers in any future campaign. The author gives a vivid and extremely true picture of the perils and hardships of the non-combatant military surgeon. The following figures show the relative sacrifice of life among combatant officers and military surgeons:—In the Crimean campaign, of 5852 combatant officers of every rank, 779, or 17 per cent, were killed, or died from wounds received in the field, and 402, or 7·30 per cent, died of various diseases (these figures include the commissariat, chaplains, &c., &c.) The mean number of medical men was 450, of whom 82, or 18·22 per cent, died of various diseases. The typhus, at Constantinople, carried off 26 combatant officers, viz.: 0·17 per cent, whilst by the same scourge, 58 medical officers perished, viz.: 12·88 per cent. These figures speak for themselves.

ANTAGONISTIC EFFECTS OF CALABAR BEAN AND ATROPIA.—Dr. Kleinwachter states (*Berliner Klinische Wochenschrift*, 1864,) that in the ophthalmic department of the hospital at Prague, last August, four boys engaged in cleaning the room, drank a portion of a solution of atropia, thinking that it contained spirits. Two of the boys either spat out or vomited the fluid, and exhibited no symptoms of poisoning; but the two others, who did not vomit, were distinctly poisoned—one, however, much more so than the other. The symptoms were those

of poisoning by belladonna, and consisted of delirium, dilatation of the pupils, feeble pulse, and in one there was coma, alternating with furious delirium. Both the patients were taken to bed, one of them being restrained in a straight jacket, and cold lotions were placed on their heads. Dr. Kleinwachter happened, accidentally, to have with him a solution of the Calabar bean extract in glycerine, and, by way of experiment, he gave to the patient who was most affected, ten drops of the solution, (six grains of extract to one drachm of glycerine,) which, in about a quarter of an hour, produced violent vomiting. The pulse became stronger and quicker, rose to 75 and then to 80 in the minute, the temperature of the body fell, the delirium abated, the patient became more quiet, consciousness returned, urine was passed with some pain in the urethra, and the pupils became somewhat contracted. In the case of the other patient, who was less affected, some of the extract of Calabar bean was dropped into the eye, but without any good effect; for, on the next day, the symptoms were almost unchanged, while the patient who had taken the solution of the Calabar bean internally had almost completely recovered. The rapid and striking improvement in one of these cases appears manifestly to be attributable to the administration of the Calabar bean extract, for the patient who was not treated in the same manner showed no improvement for forty-eight hours.—*Brit. & For. Med. Chir. Rev., and Cincinnati Lancet & Obs.*

ENTOZOA IN THE CALF.—The recently-issued part of the "Proceedings of the Royal Society" contains a paper by Dr. Cobbold and Prof. Simonds, "On the production of the so-called 'acute cestode tuberculosis' by the administration of the proglottides of *Tænia mediocanellata*." The symptoms of the disease, which nearly caused the death of the calf, are fully detailed, and in the description of the *post mortem* examination all the muscles are named in which the parasites appeared. The authors conclude their paper as follows:—"From the number of young vesicles present in the minute portion of muscle removed by operation from the living animal, we had (in the pages of the *Lancet*) publicly announced our belief that we might ultimately find 30,000 cysticerci developed in this calf; but as the larvæ were subsequently found to be almost entirely confined to the superficial muscular layers, it turned out that our calculation was considerably beyond the mark. Nevertheless, from *post mortem* data, we estimate that there were between seven and eight thousand 'measles' present, and one of us

counted 130 vesicles at the surface of a single muscle." The authors express their indebtedness to Dr. Greenhow, Dr. Anderson, and Mr. Brookhouse (Nottingham), for the specimens of tapeworm employed in this interesting experiment.—*Lancet*.

DIPHTHERIA.—A Circular from Dr. Norton.—Dr. O. D. Norton, of Cincinnati, was placed on a special committee by the American Medical Association to report on diphtheria. He has handed us the following list of queries, and any of our readers who have had opportunities for observing the disease, will confer a favor that will be appreciated and acknowledged, by corresponding with Dr. Norton:—

I. Has diphtheria occurred in your practice? If so, when did it first make its appearance? (Please state the year and the months in which it prevailed, and how many cases came under your observation.)

II. Did it occur as a sporadic, endemic, or epidemic disease?

III. Did the disease affect one class or age more particularly, and what were its general characteristics?

IV. What in your opinion are the general, and what the exciting cause or causes of the disease?

V. Do you consider diphtheria and scarlatina identical?

VI. Do you consider it communicable?

VII. What other diseases were especially prevalent at the time?

VIII. Do you know of any disease having affected animals during the occurrence of diphtheria in the community?

IX. Have you seen the diphtheritic membrane developed upon the cutaneous surface or upon wounds?

X. In what proportion of cases has the disease invaded the larynx? Also, the œsophagus?

XI. What have been the sequelæ?

XII. What has been the result of *post mortem* or microscopical examinations?

XIII. In what proportion of cases have you found albumen in the urine?

XIV. What has been the rate of mortality? and what the immediate cause of death?

XV. What was the general course of treatment pursued by you, and what particular remedial agents seemed to be most productive of good?—*From the Cincinnati Lancet & Obs.*

DRY GANGRENE OF THE HAND FROM INJECTIONS INTO AN ANEURISMAL SAC.—M. Chabrier has published in the *Mont-*

pelier Medical, the case of a man suffering from traumatic aneurism at the bend of the elbow. Compression having been tried in vain, an injection of five drops of solution of perchloride of iron into the sac was resorted to. The pulsations were thereby not arrested, and, as the patient seemed to have been but little inconvenienced by the injection of the coagulating fluid, a second operation of the same kind as the first was performed two days afterwards. The hand became immediately blanched, like a limb severed by amputation, and severe pain was complained of. The dry gangrene began at the tip of the fingers, and was in a fortnight so complete that the hand resembled a dried black claw. The line of demarcation had very early been observed about the wrist, and the hand was finally removed by a few touches of the scalpel. The aneurismal tumor had, in the meanwhile, become quite solid, and devoid of any pulsations. As the effect on the hand was so instantaneous, M. Chabrier thinks that the mischief was caused by embolism.

APPLIANCES FOR INVALIDS.—At the recent Fair of the American Institute in New York, Mr. T. McElroy, of New York, had on exhibition a surgical operating table, which is so contrived as to put the patient in any position that may be required for the most difficult operation. The same inventor had an ingenious invalid bedstead.

Furman & Wells, of Addison, N. Y., exhibited O. P. Furman's patent invalid bedstead; and E. Marx, of New York city, had what he calls a patent patient elevator, for raising sick and disabled persons from their beds with ease and comfort, and placing them in any position nature or convenience may require.—*Med. & Surg. Rep.*

SINGULAR ELECTRICAL PHENOMENA IN THE HUMAN BODY FOLLOWING LIGHTNING STROKE.—M. Boudin recently sent a note to the French Academy of Sciences showing a powerful electric action in the bodies of persons recently struck by lightning, based on two observations which he related.

The first was the case of a man, who, June 30th, 1854, was killed by a stroke of lightning, near the Garden of Plants, at Paris, and whose body remained for some time exposed to a heavy rain. After the storm, two soldiers, wishing to raise the body, received each a violent shock at the moment when they touched it.

In the second case, two artillerists, charged with raising two electric telegraph posts which had been thrown down September

8th, 1858, by a storm at Zara, in Dalmatia, having, two hours after the storm was over, taken hold of the telegraph wire, felt at first two slight shocks, and then were suddenly thrown down. Both had their hands burnt; one of them, indeed, did not return to consciousness. The other, in attempting to raise himself, fell back again immediately on touching with his elbow one of his comrades, who had been drawn by his cries to his assistance. This last man, also thrown down in his turn, received various injuries of a nervous character, and his arm showed a burn on the skin where he had been touched.—*Boston Med. & Surg. Jour.*

DANGER OF SUBCUTANEOUS INJECTIONS.—Prof. Nassbaum, of Munich, has just published an interesting account of an accident which happened to himself. Suffering from neuralgia, he had injected morphia under his own skin more than 2000 times—sometimes to the extent of five grains of morphia in twenty-four hours. Two months ago, he injected two grains of acetate of morphia, dissolved in fifteen minims of water, and accidentally sent it direct into a subcutaneous vein instead of into the cellular tissue. He gives a graphic account of his dangerous position for about two hours, after which the effect passed off. He has seen similar effects in a small degree in two of his patients, and the practical lessons are, that as it may be impossible to avoid veins at all times, and one may be punctured unawares, subcutaneous injection should always be done *very slowly*. The effects are so instantaneous that the syringe can be stopped at the first sign of danger, and some of the injected fluid, mixed with blood, may even be sucked out again by the syringe. It is very remarkable how the effects of the same dose of the same substance differ when injected directly into a vein and mixed with venous blood, and when they filter into the blood from the cellular tissue through the unbroken coats of the vessels.—*Med. Times and Gazette.*

INJECTION OF AIR INTO FOUL ABSCESES AND FISTULÆ.—Prof. Rozer states that there is no better means of treating an abscess, the contents of which have become foul and stinking, than by the frequent injection of air by means of an elastic catheter and syringe. The patient is to be instructed to repeat this injection sufficiently often to prevent the accumulation of pus; and this operation not only adds much to comfort by removing the nauseous smells, but also seems to greatly expedite the contraction and closure of the cavity of the abscess.

It is of especial benefit in the treatment of the fistulous openings remaining after emphysema, and attended with such a disgusting smell. This is speedily removed by aid of the injections, and the healing of the fistula promoted. This is often retarded for months, owing to the valvular condition of the track of the fistula preventing the free issue of the pus, which is secured by the daily passage of the catheter for the purpose of injecting the air.—*Archiv. der Heilkunde*, in *Medical Times and Gazette*.

TREATMENT OF CHORYZA.—M. Luc, an Assistant-Surgeon in the French army, recommends the inhalation of tincture of iodine in nasal catarrh. "I inhaled tincture of iodine," says he, from a phial for one minute at a time, at intervals of about three minutes; the heat of my hand was sufficient to promote the evaporation of the iodine; the headache yielded first, sneezing became less frequent, the secretion less copious, and although the inhalation caused a burning sensation in the throat, I was cured at six o'clock P.M., of a cold which from nine A.M., to three P.M., had been sufficiently violent to compel me to use four pocket handkerchiefs."—*Cincinnati Lancet and Observer*, from the *Dublin Med. Press*.

M. Luc claims to have had equally good results in several other cases.

RECORDS OF THE MEDICAL DEPARTMENT.—Surgeon-General Barnes has sent a communication to the Secretary of War, setting forth the perilous condition of the records, etc., in the Medical Department, which is situated in a building in no way fire-proof, and by reason of its proximity to wooden buildings, liable at any moment to be burned up. Already the books and papers most valuable, in a scientific point of view, and to the families of deceased soldiers, have accumulated so that they occupy the entire story of a very large building. A proposition will be made in Congress immediately upon its organization, to construct fire-proof buildings for the State and War Departments, the latter to include suitable apartments for the Surgeon-General.—*Med. & Surg. Rep*.

A FOSSIL MAN has been dug up in a bed of drift between Veyziat and Oyonnax, near Nantua, (Ain). The body was found in an inverted posture, but the bones did not adhere together, but were brought out one by one. The matter will probably be brought before the the Academy of Sciences.—*Abeille du Bugey*.

LONGEVITY IN ENGLAND AND WALES.—The returns of mortality for England in the year 1863, just completed, record the death of 213 men and 430 women ninety-five years old or upwards when they died. Twenty-one men had reached 100 or upwards, and one at Chelsea was 109. Sixty-two women had also completed a century of life or more, and one at Liverpool was 112 years old.

PROF. MALGAIGNE.—We regret to state that the health of this eminent surgeon is far from improving. He has just resigned his surgical chair at the Faculty of Medicine at Paris.

A PRIZE ON THE VACCINO-SYPHILITIC QUESTION.—The Medico-Chirurgical Society of Bologna (Italy) offers for 1867, a prize of £20 on the following question: Determine by facts whether the vaccine virus may or may not transmit syphilis. Another prize (£40) is offered on the subjoined subject: Make known, and give its proper value to, the share which Italians have had in the advancement of surgery in the nineteenth century.—*London Lancet*.

LONDON LANCET.—The December number of this standard monthly of English medical periodical literature, is promptly on our table, with its usual rich variety of practical and interesting reading matter.

THE MECHANICAL TREATMENT OF ANGULAR CURVATURE,

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